AUGUST, 1951

Industrial FINISHING

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ammunition shells, cartridge clips, shoe eyelets, buckles, buttons, harness hardware, radar parts, used in World War II, received these government-approved, protective black finishes. Enthone Ebonol blackening processes meet today's Army, Navy and Air Force specifications for black oxide coatings on steel, copper, brass and zinc . . . for wear, reflectivity, saltspray, and weathering. NEW EBONOL Booklet *including detailed operating instructions, sent free on request. U.S. Patents*—2,364,993, 2,460,896, 2,460,898, 2,481,854. Canada, 463,852.

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Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

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AUGUST, 1951
Vol. XXVII, No. 10

ABC

A monthly magazine for finishing room and paint shop foremen, production superintendents, chemists, purchasing agents and company executives of industrial plants where production cleaning and finishing are major operations in the manufacture of parts and products.

★

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27 TWENTY-SEVENTH YEAR OF PUBLICATION

Fewer Industrial Accidents. American workers were a lot safer in 1950, the National Safety Council reports. Industrial injury rates for last year, released by the Council in advance of the 1951 edition of its annual statistical yearbook, "Accident Facts," show a substantial reduction in both the frequency and severity of 1950 accidents as compared with 1949.

* * *

New Luminescent Paint is announced. The usual luminous paints are activated by ultra-violet rays or black light. According to the producer, this new paint glows under the Westinghouse Sterilamp, originally designed to kill bacteria. The combination is said to produce a higher light intensity than the ordinary fluorescent paints.

* * *

Airtight Goggles have been perfected for use in industrial plants where operators must work in heavy concentrations of gas, fumes or smoke. The goggles are constructed with two frames with the headband attached to the outer frame. The inner frame is made of rubber.

* * *

Government Controls. Over 3600 individual items are now under government price or supply control, and the end is not in sight. The latest issue of the Controls Guide, published every six weeks by the N.Y. Journal of Commerce, lists 198 different regulations and several thousand amendments. By September, according to the business newspaper, there may easily be twice as many regulations in effect.

* * *

Better Electrical Tape. A new type electrical tape, made with Koroseal material, and said by the manufacturer to have many advantages over ordinary electrical tapes is announced by The B. F. Goodrich Co., Akron, Ohio, developers of Koroseal.

The adhesive is non-transferring, and can be pressed onto a dry surface innumerable times without losing its stickiness. It will not transfer the adhesive from the face, lose its tackiness, or ability to adhere, sticks snugly and securely to itself and insulation around copper wire. This is not true with ordinary tapes, the company says.

The tape has a dielectric strength of 8000 volts, is waterproof, highly abrasion resistant and flameproof, resistant to acids, oil, alkalies and corrosive salts.

* * *

TV Across the West. Along a 1700-mile route crossing five states westward from Omaha to San Francisco, work is being hurried to complete the missing links for coast-to-coast television by the end of this year. Television picture signals will be beamed from station to station along super-high frequencies called microwaves.

Microwaves, like light waves, travel in straight lines; do not follow the cur-

(Continued on page 7)

Introducing

A BRAND NEW, AND TOTALLY DIFFERENT PRODUCT

No. 2100

"HOT-R-COLD"

LACQUER

OVER 35% SOLIDS—May be sprayed **HOT or COLD, without thinning** or **adjusting** of **any kind.**

HEAVY BODIED *(over 35%)*
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- Less material needed for more thorough cleaning.
- Longer usable life, greatly reduced concentration means substantial saving.
- Blend of synthetic, surface-acting chemicals, non-corrosive, completely neutral, fast acting.
- Prevents rust for a number of weeks.

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Manufacturers of Industrial Chemicals

vature of the earth. However, they can be focused into a narrow beam like a searchlight and aimed precisely from point to point. A clear line of sight must exist from one relay tower to another.

The radio relay stations between Omaha and San Francisco are towers less than 40 miles apart; these towers range up to 240-ft. in height. Tower heights depend upon the earth's curvature, which makes it bulge about 100-ft. every 25 miles, and upon hills and obstructions.

* * *

Safe Hydraulic Fluid. A new non-inflammable hydraulic fluid just announced by the R. M. Hollingshead Corp., 830 Cooper St., Camden 2, N. J., gives promise of eliminating the fire hazards now associated with many of the industrial hydraulics systems and hydraulically operated machines.

Known as "H-2 Non-Inflammable Hydraulic Fluid," the new product was developed by company research chemists in cooperation with the U. S. Navy's Bureau of Aeronautics which had been experimenting on water-glycol fluids for a number of years. "H-2" is now being used in most Navy aircraft.

* * *

Color. The following Color Facts have been released by the Color Research Laboratory of Sun Chemical Corporation:

Green is a tranquil color, a fact which is commonly known. Blue and violet are the most subduing; and red, of course, is the most exciting color. For most color-sensitive individuals time passes faster in cool-colored surroundings.

Modern color conditioning finds a good example in the way hospitals apply color. In major and minor operating rooms blue-green is standard for walls. This reduces glare, relaxes

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CLEAR METAL LACQUER
for SPRAYING DIPPING TUMBLING
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We know how to formulate Thinners to your requirements—been doing it for 26 years. We've satisfied big and little customers . . . let us show you how a Lacquer Thinner *SPECIALIST* can supply you with the *right* Thinner . . . and still save you money.

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the surgeon and aids the acuity of his eyes.

Most hospital service departments are white or pale tints, to encourage cleanliness. Particularly in the maternity division, warm colors or tones of ivory and flesh stimulate an optimism and cheerfulness favorable to recovery.

* * *

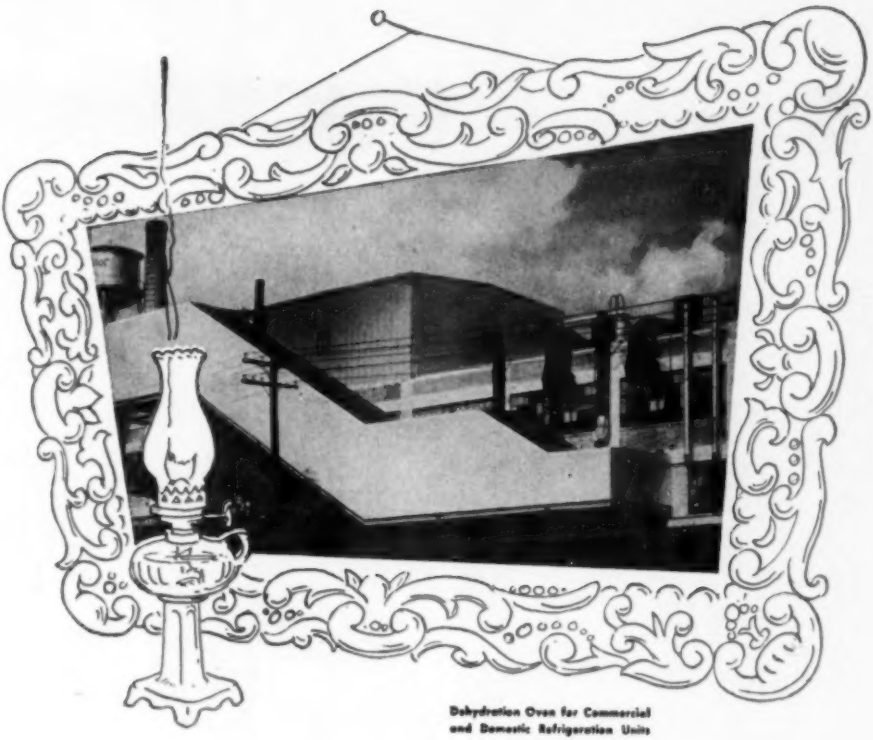
Furniture Brides Prefer. In recent years, brides have been among the foremost rank of those who favor the clean lines and simple decoration of modern furniture. Authorities estimate that brides and young homemakers account for from 40% to 60% of the modern furniture sold today. Yet, in most cases, the young matrons do not favor the extreme ultra-modern styles; they prefer, as a rule, those modern pieces which are simplifications of traditional styles. — *Seng News Letter.*

* * *

Iron and Steel Scrap. To aid the flow of much needed iron and steel scrap to mills and foundries, a number of manufactuers' committees have launched scrap drives.

These programs consist of searching out all dormant scrap, such as obsolete machinery, tools, jigs, and dies, and equipment that is worn beyond repair or in need of parts that are no longer available; the consideration of wrecking or dismantling projects that will produce scrap; and the release of all production and dormant scrap into normal channels as early as possible.

An estimated 32½ million gross tons of purchased scrap will be required by steel mills in 1951 if the production schedule for defense and civilian needs is to be met. This is three million more gross tons than were required in 1950, and the 1952 production schedule will call for more.



Dehydration Oven for Commercial and Domestic Refrigeration Units

Portrait of an Oven Going Up-hill!

To the naked eye our picture seems to show a conventional ramp leading to an ordinary roof oven.

Look closely — the ramp is constructed of insulated panels.

Yes, this is a continuous oven from the time the part enters the tunnel until it comes down again — no waste travel.

In this completely pressurized oven, the total air supply is fed to the roof proper and forced down the ramp.

The arrangement of the ductwork, the location of the exhaust, the design of the heat seals are but a few of the intricate problems that can only be handled by an experienced equipment builder.

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Michigan

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INCORPORATED

THE Lilly COMPANY

FINE ESTERS

High Point, N. C.

they're DEFENSE bonds now!

PRESENT NAME of the bonds that industrial editors are plugging is DEFENSE BONDS. Here the young lady tries to impress you with the change in our national situation which makes buying bonds so important. Oh, yes, this is starlet Piper Laurie of Universal Pictures Company. She paints pretty, don't you think? She had just finished saying, "Editors should promote the Payroll Savings Plan for buying Defense Bonds!" when the photographer snapped this picture.

Just as this young lady is trying to impress the importance of Defense Bonds—through the Payroll Savings Plan, we too like to impress the importance of the Lilly "Key" in your finishing plans. Lilly's Dependable Finishes are specifically formulated for specific products and purposes, thus the Lilly "Key" is truly the "Key to the Right Finish." Why not begin using Lilly's Dependable Finishes today—so that

"WITH THE RIGHT FINISH—YOU'LL FINISH RIGHT"

THE Lilly VARNISH COMPANY
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ROLLER COATING

A look at roller coating as a means of applying paint coatings to the surfaces of flat plywood panels and sheets of cardboard, composition board, metal and plastics; also for coating ribbons of coiled material which are unwound and wound again on reels.

BY P. C. BARDIN, Associate Editor

THE ROLLER COATER offers a rapid and economical method of applying paint coatings or adhesives to thin flat panels of uniform thickness and to long ribbons of sheet metal, paper or fabric that unwind from and wind onto large spools or reels. Little if any coating material is wasted by a roller coating machine—and it can be adjusted to accurately control the film thickness of coatings applied. Once the setting of the rollers is established and recorded, and with the type and viscosity of the coating material remaining con-

In the plant of Sullivan Silk Screen Co., Louisville, Ky., a one-side roller coater is laying on the solid background color on sign stock which is to be mechanically printed by the silk screen process. Photograph supplied through the courtesy of Kenn Manufacturing Co.

A, applicator roll; B, feed, drive or impression roll; D, doctor roll; F, fountain roll; S, scraper.

stant, the same film thickness can be duplicated, regardless of how often the operation is repeated.

Several different sizes, types and kinds of roller coating machines are on the market. They range from a simple one-side coater having three rollers (two above and one below) to the elaborate multiple roller machines used in continuous automatic processing equipment for coating metal strips, paper, textiles, tapes and wire. Some of these machines are used in highly specialized fields where the equipment is built to automatically perform a sequence of operations, only one of which is just coating; the coating material might be waterproofing, fireproofing, drawing compound, adhesive or finish coating.

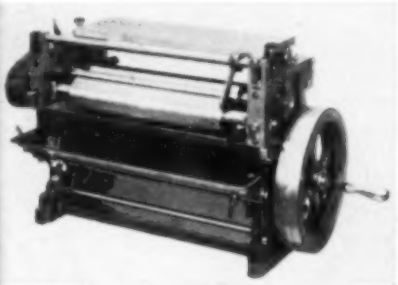
Regardless of the number of rollers used in a machine, the principle of roller coating remains the same. Sheet stock passes between two power-driven rollers which are mounted one above the other. One or both of these contact rollers may be an applicator (paint spreader) roller, depending upon whether the machine is a one-side or a two-side coater.

Coating material is supplied to the applicator or spreader roll by either of two methods. In one the applicator roll is in actual contact with a supply of liquid coating in the long V-shaped trough that is formed between it and the doctor roller. In this case only two rollers are used (above the stock), a doctor roll and an applicator roll.

In the other method three rollers are used above the work being coated. One, the fountain roller, rotates in contact with a supply of coating

material. Another roller (doctor roll) makes close contact with the fountain roller, receives coating material from it, and transfers that coating material to the applicator roll, see cross sectional drawings with this article.

In the 2-roller type of machine, the chief function of the doctor roll is to control the thickness of the coating material picked up and carried forward by the applicator roller and, in turn, to control the film thickness of the coating deposited onto the work. Naturally, the tighter the pressure between these two rollers (doctor and applicator rolls) the thinner the film of coating material that will come through and cling to the applicator roller, consequently the thinner the coating that will be applied to the surface being coated.



Infeed end of 14-in. laboratory model roller coater. Control of coating flow and thickness is regulated by thumb screw adjustment on fountain, feed and composition rollers. Fountain and feed rollers may be tripped away from the composition roller and returned to coating position by means of a hand lever, without affecting their setting with respect to each other. A scraper blade rubs against the lower or impression roller to keep it clean and prevent the underside of sheet from contacting coating material. Coater may be operated by hand or a belt placed over the flywheel and connected to a 1/4-hp. motor. Photograph, courtesy of Rutherford Machinery Company.

The liquid coating material may be manually poured into the angular trough between the rollers or arranged to flow through piping from a container. Complete success with this type of arrangement will depend upon the use of leakproof end plates at each end of the rollers.

3-Roller Type Machine; Adjustments Available

In the 3-roller machine (three rollers above the stock) where a fountain roller usually revolves in a shallow pan or reservoir, the coating material is picked up by the fountain roller, transferred by contact to the doctor roll which, in turn, transfers it to the applicator roll. Here, also, pressure between the doctor and applicator rolls determines the thickness of the coating deposited on the work.

All rollers are usually independent as to setting, and any two may be adjusted without affecting the others. On some machines, the entire fountain unit consisting of the fountain roller and the doctor or transfer roller may be pulled away from the applicator roller and then returned to operating position without disturbing the original adjustment of the rollers. This arrangement makes it possible to avoid an excessive build-up of coating material between the doctor and applicator roll or, when coating paper or thin cardboard, to remove a sheet of stock that may wrap around one of the rollers.

The rollers are separately adjustable and their setting is shown

(Continued on page 18)

Simuplate FOR GOLD, BRASS AND BRONZE COATINGS

With shortages and restrictions on metals, you can keep your production line moving with SIMUPLATE — a practical new organic coating. When applied over properly prepared surfaces it develops the bright lustre of either polished gold, brass or bronze. It's passed many exhaustive tests for wearability under all types of conditions.

Let us tell you more about SIMUPLATE and show you how easily you can get striking effects with combinations of SIMUPLATE finishes. Write or call today.

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"To aid manufacturers in maintaining their finishing standards, Sherwin-Williams makes this statement of policy: "Restrictions in the supply of some of the quality ingredients of such well-known Sherwin-Williams industrial finishes as Kemvar, Kemclad and others may affect the *quantity* of such finishes that can be supplied.

"So long as these branded finishes can be supplied at all, however, no deviation in their *quality* will be permitted. "Users of such finishes can therefore be assured that if a label *says* KEMVAR, the material so labeled will *be* KEMVAR, as nearly unvarying in established performance characteristics, both on the production line and afterwards, as strict quality control can make it."

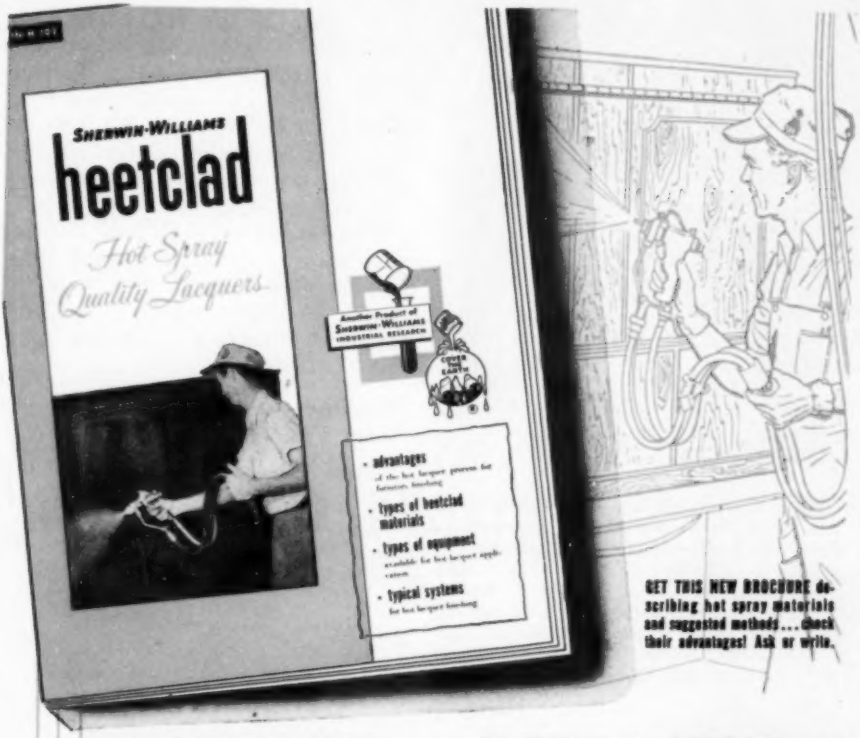
. . for DEFENSE production:

"The same integrity of product and appreciation of practical production problems is assured to users of Sherwin-Williams finishes for defense orders as for civilian requirements.

"Every effort will be made to furnish defense manufacturers with suggestions for making necessary change-overs to meet government finishing specifications accurately in spirit as well as letter, with least possible modifications of existing equipment."

Sherwin-Williams experience extending through two World Wars will be made available on any defense production problems, through facilities extending from coast to coast. Call, wire or write The Sherwin-Williams Co., 101 Prospect Ave., Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES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• types of heetclad materials
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• typical systems
GET THIS NEW BROCHURE describing hot spray materials and suggested methods... check their advantages! Ask or write.

COLD FACTS on HOT LACQUERS

- How to apply them
- Where to use them
- How they save on finishing costs

Does hot spray application offer worth-while advantages in your furniture finishing operations? What are the types of hot spray materials available and their properties? Why are special formulations desirable?

You'll find helpful information on these and other questions in this new Sherwin-Williams brochure. In addition to discussing where and how the hot spray process can be used to advantage, it includes specifications on two lines of S-W lacquers specifically adapted for hot application, together with representative finishing schedules.

If your operations include the finishing of furniture or wood products you'll want this data on Heetclad Lacquers. Ask your S-W industrial representative for a copy or write The Sherwin-Williams Co., Gen. Ind. Div., 101 Prospect Avenue, Cleveland 1, Ohio.

SHERWIN-WILLIAMS
INDUSTRIAL FINISHES

"Walco Coater" 48-in. wide. Coater rolls, 3-in. steel core covered with ½-in. thick Neoprene (synthetic rubber). Doctor roll is 2½-in. in diameter. Reservoir for liquid paint, or other coating material, is formed by angular space between and above two rolls. This space is closed at the ends by drip-proof end plates. Photograph, courtesy of L. R. Wallace & Company.

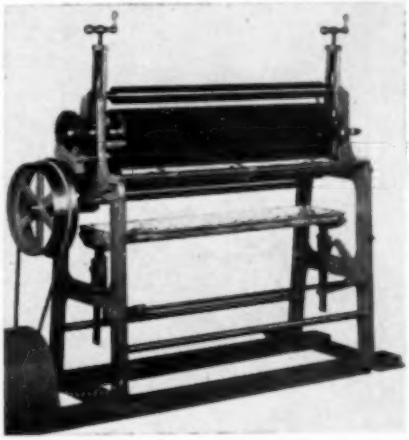
on dials which, on some machines, are graduated in thousandths of an inch. As mentioned previously, if a record is kept of the setting of the rollers, when this identical setting is repeated, the same film thickness will be obtained on any future runs wherein the same gauge of metal or thickness of stock and the same type and viscosity of coating material are used.

In the 3-roller type of machine the lower drive or impression roller usually operates in a shallow pan which contains a small amount of coating material. However, none of this coating material is allowed to touch the under side of the work because a doctor blade or scraper thoroughly cleans the surface of the drive roller before it contacts the underside of the work. Reason for the presence of coating material in the pan beneath this drive roller is to lubricate the surface of the roll and assist in the cleaning and scraping action.

Roller coating machines usually have a pump to recirculate the drip pan overflow from a container back to the coating reservoir. This arrangement keeps the material well mixed at all times.

Machines for Coating Both Sides (Top and Bottom)

Thus far I have considered only machines for coating one side of stock. Machines designed for coating two sides of panels or sheets are constructed with identical res-



This 36-in. roller coater coats the underside of whatever is run through it. Composition rollers are supplied when lacquer, varnish or enamel is used. In the latest model a gear-head motor replaces the pulley and belt drive. Photograph, courtesy of The Grand Rapids Panel Company.

You're always
"ON THE BEAM"
with
LCA
U. S. GOVERNMENT
SPECIFICATION
FINISHES

LCA

It's always good sense to consult a specialist when you have a particularly difficult problem.

For this reason, many firms engaged in defense production, as well as those making civilian goods, have found that when LCA finishing experts take over, they have the assurance that the final result meets with satisfaction.

Therefore, before you bid on defense contracts . . . let LCA estimate on the needed SPECIFICATION FINISHES.

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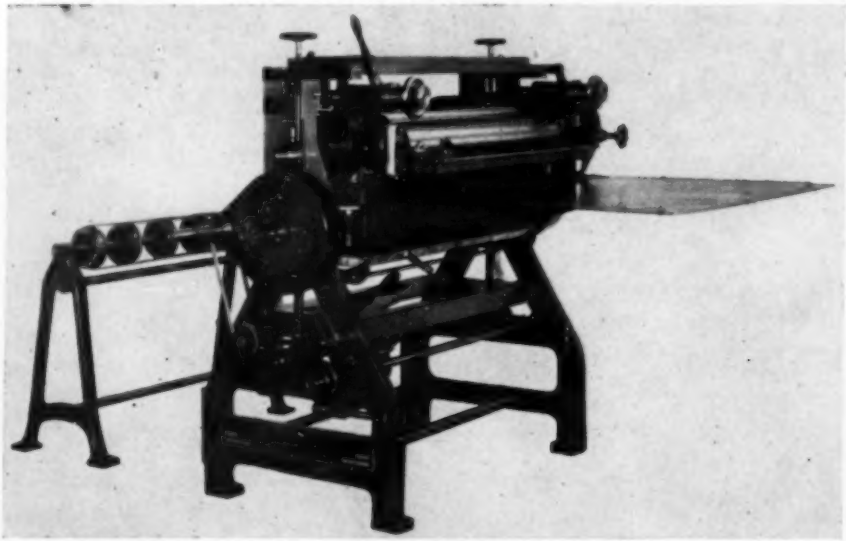
ervoir, feed, doctor and applicator rollers on both top and bottom, but with no doctor blade or scraper blade on the lower feed roller. Coating material is applied to the underside of stock in the same manner as to the top side.

In those machines belonging to the first classification — that is, where the applicator roller picks up its coating by direct contact with the material—the 2-side coater has a doctor roller to contact the lower applicator roll which revolves in a reservoir of coating material. In this case, for coating two sides of the work, four rollers are required, namely a doctor and applicator roller for both the top and the bottom sides of the work.

Roller coaters are available in sizes ranging from a laboratory or bench model (sometimes operated by hand) with rollers 8-in. to 26-in. long, to production machines that have rollers 36-in. to 122-in. long. The sizes most widely used for coating sheet stock have rollers long enough to coat sheets from 36-in. to 50-in. wide.

For most roller coating jobs the diameter of the rollers, especially the applicator roll, is not too important. However, for some special



Streamline Coater, available in sizes to take sheets 36 to 50-in. wide. Positive control of coating material is accomplished by two metal rollers—a fountain roller and its contacting roller which feeds coating material to the composition roller. These rollers are separately adjustable and final setting is recorded on dials graduated in thousands of an inch. Fountain and feed rollers, main drive shaft and delivery belt drive shaft have self-aligning ball bearings; the composition and impression rollers run in roller bearings. Scraper blade for the lower impression roller can be removed for cleaning and quickly replaced. Photograph, courtesy of Rutherford Machinery Company.

CONVEYORIZED FINISHING SYSTEM REPLACES 3 BATCH TYPE OVENS AND DEGREASER IN SAINT PAUL PLANT

Atlas Mfg. Co., St. Paul, Minn., producers of furnace casings and boiler jackets, not only saved about 800 sq. ft. of floor space when they installed this 600-ft. conveyorized DESPATCH Finishing System with ovens on the roof, they eliminated a costly degreasing operation as well.

"The introduction of the burn-off process gives every indication that it will pay for the equipment in operating savings," says the plant superintendent.

The new system, engineered, built and installed by DESPATCH, is rated at 100 cabinets in 8 hrs. It has noticeably increased production and reduced labor costs by about 25%. Here is another example of how increased production, lower operating and maintenance costs are possible with DESPATCH Finishing Systems.

Whatever your finishing problems are, DESPATCH engineers are ready to help you solve them. Write today for Bulletin No. 51E.

DESPATCH
OVEN COMPANY

Conveyor is shown entering and leaving burn-off oven. Ware is degreased by subjecting it to 600° F. for 6 min. Finish bake time is 8 min. at 350° F.

Ware enters and leaves burn-off and finish bake ovens thru single bottom openings.

Unloading takes place at this point where the various pieces are sorted and stacked on trucks ready for packing and shipping.

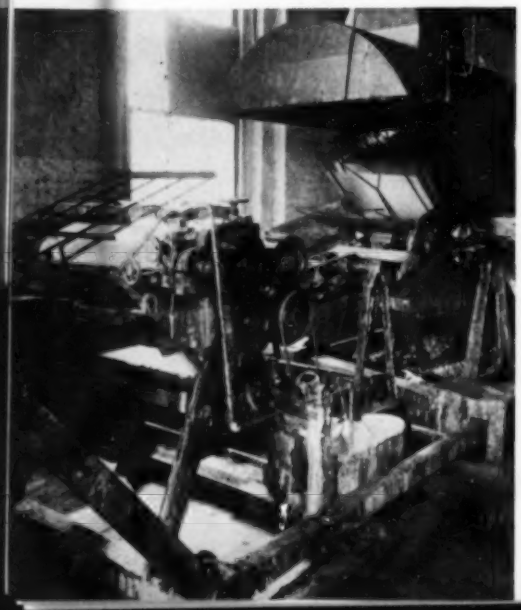
jobs the applicator roll must be large enough in diameter so that its circumference (distance around) will be at least equal to the length of panels or pieces of cut stock that are to be coated. Then one complete turn of the roller will coat each panel or sheet of cut stock.

While it is seldom that roller coaters are used for coating what might be called "thick stock", some machines will open up as much as 3 or 4-in. How thin the sheet stock may be that can be coated on these machines depends upon its rigidity. Any sheet that is sufficiently rigid to pass through the machine by friction can be coated.

Most roller coaters have variable speed drives which provide speed ranges up to as much as 150 lineal feet per minute. Expressed in terms of production capacity, these machines will coat from 1500 to 3600 sheets per hour. Single speed machines generally operate at about 90 lineal feet per minute.

The production capacity of a roller coater depends largely on the method and speed of feeding sheets into the machine, *and the handling and disposal of coated sheets that leave the machine.* In some cases sheet stock is fed into and removed from the machine manually. However, for large production runs of uniform size sheets, automatic air-operated feeders are available. The speed of these feeders is synchronized with a finger-type conveyor that retains each sheet separate from the others as they pass through a convection oven that bakes the coating.

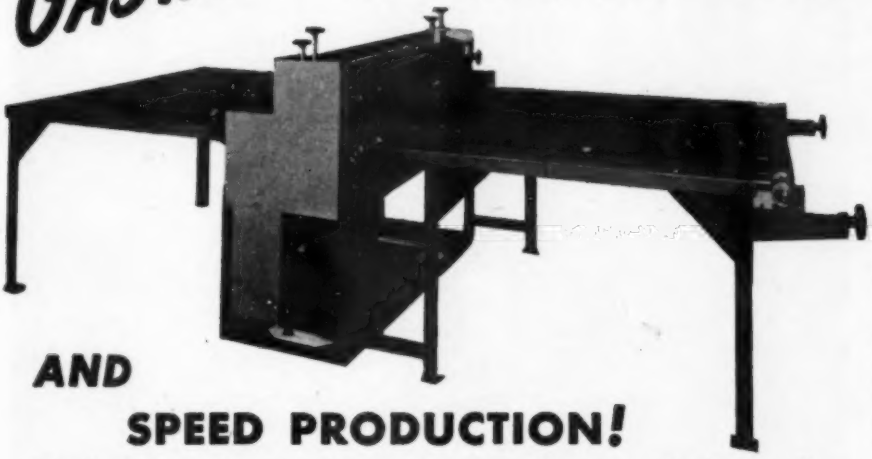
Roller coater and gas-fired oven for applying and baking background colors to metal sheets just before lithographing. Wicket-type conveyor carries sheets through oven.



Roller Coating Stock That Unwinds from Reels

Roller coaters discussed so far in this article are adapted to the coating of individual sheets of material. Machines are available for coating continuous metal strip that is unwound from spools or reels and then wound up again on other spools. Some of these roller coating setups include cleaning, surface preparation, drying, coating the metal strip on one or both sides (and both edges if desired), baking the finish, and rewinding the coated work on reels. A tension device holds the metal strip in suspension so that its surface doesn't drag against anything during the several automatic operations. This is a fully mechanized operation, and the principle of coating is identical to all roller coaters in that the coat-

GASWAY ROLLACOAT FINISHERS CUT COATING COSTS



AND SPEED PRODUCTION!

The benefits to be gained by using the Rollacoat method of applying finishes and protective coatings, to practically any type of flat materials, are three-fold. In the first place coating speeds are greatly increased over those of any other method and are governed largely by how fast the coated materials can be handled or dried. Secondly, the coverage per sq. ft. per gallon is usually at least 50% greater, the only loss being the paint removed from the rolls at the end of a run. In the third place you obtain finer quality of finish due to accurate control of thickness and evenness of coat.

The applications for Rollacoating are numerous. Top, bottom and sides of practically any type of flat material, whether sheet or coil stock, can be coated by a single pass through the machine.

Special equipment for cleaning, treating, coating, drying, and rewinding strip in continuous process can be constructed to special order.

GASWAY CORPORATION

Write or wire today for the 12 page Gasway illustrated book describing Rollacoat Finishers, their possibilities and limitation.

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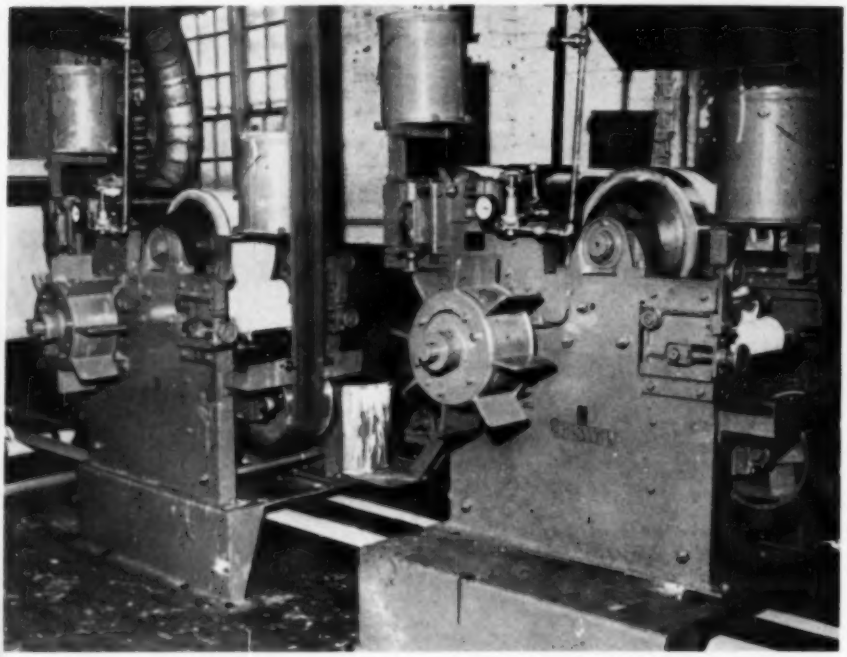

A double roller coating unit where a thin strip of metal (up to 8-in. wide) is fed down into the coaters from above to save valuable floor space. The strip passes around a large diameter rubber covered roll which is directly connected to tension brake. Very little air pressure is required to develop tremendous strip tension. Photograph courtesy of Gasway Corp.

ing material is fed to the applicator roller by means of a doctor roll or transfer roll, the pressure of which, in relation to the applicator roller, determines film thickness deposited on the metal strip.

Edge coating of stock thicker than 1/16-in. is accomplished while the strip passes fully suspended between two vertical rollers as it leaves the roller coating machine. Machines of this type are especially adapted to coating ribbons of metal for venetian blind slats and other products that may be coated in long lengths for subsequent cutting and forming operations. The term continuous coating means just that. Once started, the unit operates continuously until the end of the day. Through the use of two unwinding reels for each strip, coils are loaded and unloaded without stopping or slowing down.

This type of continuous roller coater can be used for coating materials other than metal, provided the material can be coiled and has sufficient tensile strength to withstand the pull of the tension device during air drying, force drying or baking. *(Continued on page 28)*

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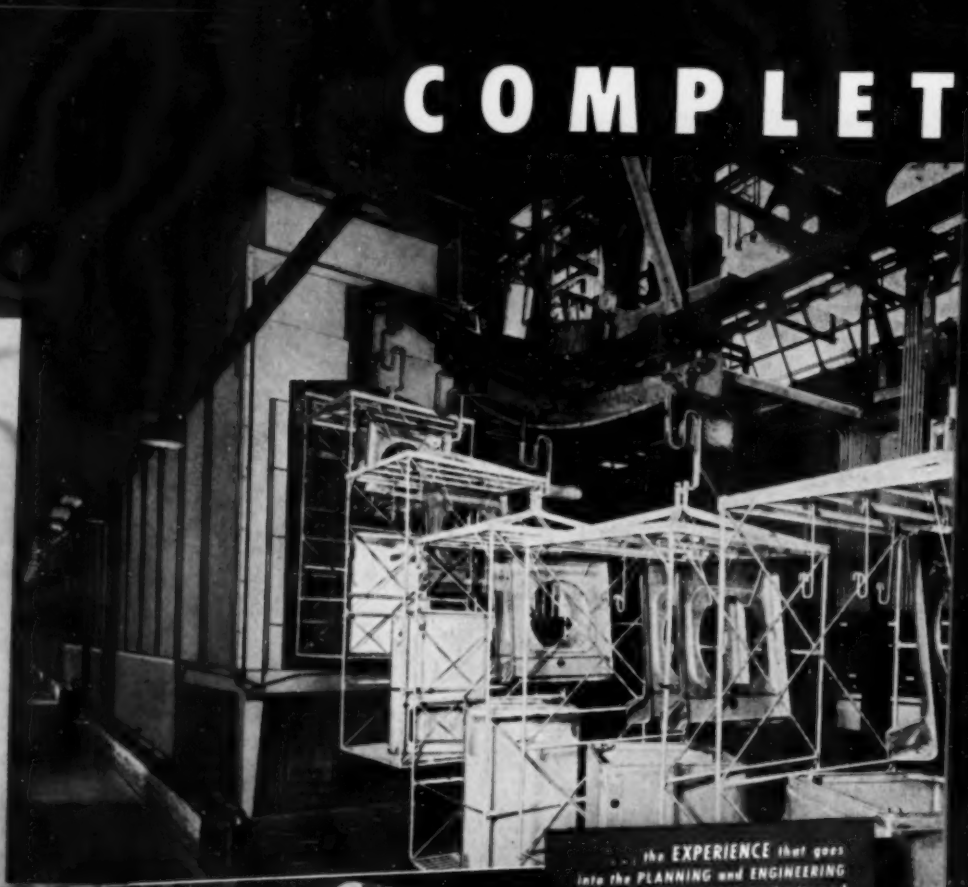
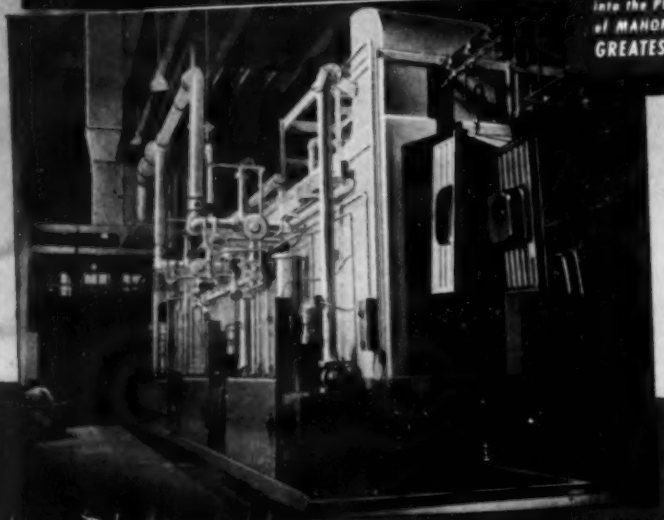


... the **EXPERIENCE** that goes into the **PLANNING** and **ENGINEERING** of **MAHON EQUIPMENT** is the item of **GREATEST VALUE to YOU!**



The Mahon Cleaning and Pickling Machine illustrated above was installed as part of a complete Mahon Finishing System in the plant of one of the world's largest manufacturers of Household Appliances. The three installations illustrated on these pages are representative of others serving various industries engaged in Porcelain Enameling Operations in connection with their products.

M

E

SYSTEMS

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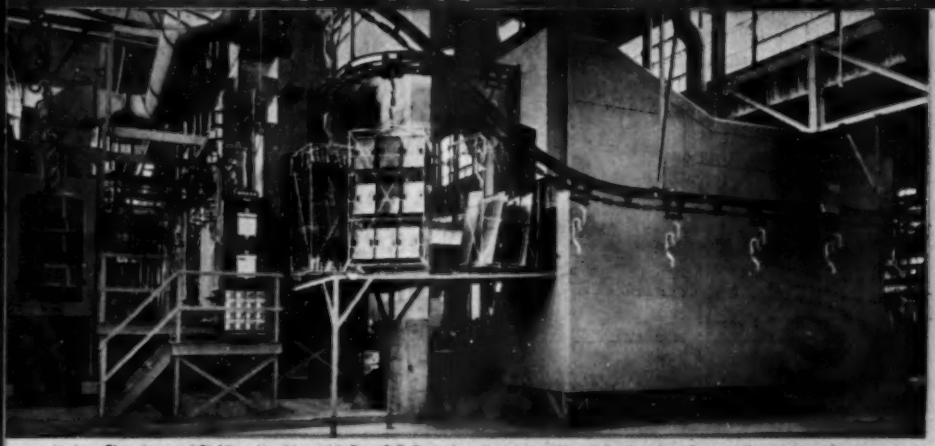


Mahon Cleaning and Pickling Machine with Dry-Off Oven Installed in the Plant of a Leading Electric Range Manufacturer.

CLEANING and PICKLING OPERATIONS Made Simple by Completely Enclosed Continuous Processing Equipment!

New, modern Mahon Cleaning and Pickling Machines have reduced pickling operations to one-third the time formerly required . . . volume of processing solutions has also been drastically reduced. Elaborate ventilating and air replacement systems are no longer necessary with these completely enclosed tunnel-type processing machines. A patented Hydro-Hermetic Seal, running the full length of the machines, prevents the escape of active chemical fumes and permits the use of an overhead monorail conveyor. Manufacturers who are now using these machines in production are loud in their praise of their time-saving effectiveness. Mahon Cleaning and Pickling Machines can be fitted right into your present production system . . . they can be designed to meet any requirement of product processing, production rate, or plant layout. No matter what your finishing equipment requirements may be, you can turn to Mahon with complete confidence . . . remember that Mahon engineers are backed by a wealth of technical knowledge and practical know-how accumulated through thirty years of pioneering development in this highly specialized field. See Mahon's Insert in Sweet's Mechanical Industries File for complete information, or write for Catalog A-52.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 34, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-Off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens; Core Ovens, Hydro-Foam Dust Collectors, Fog-Filters, and other Units of Special Equipment.

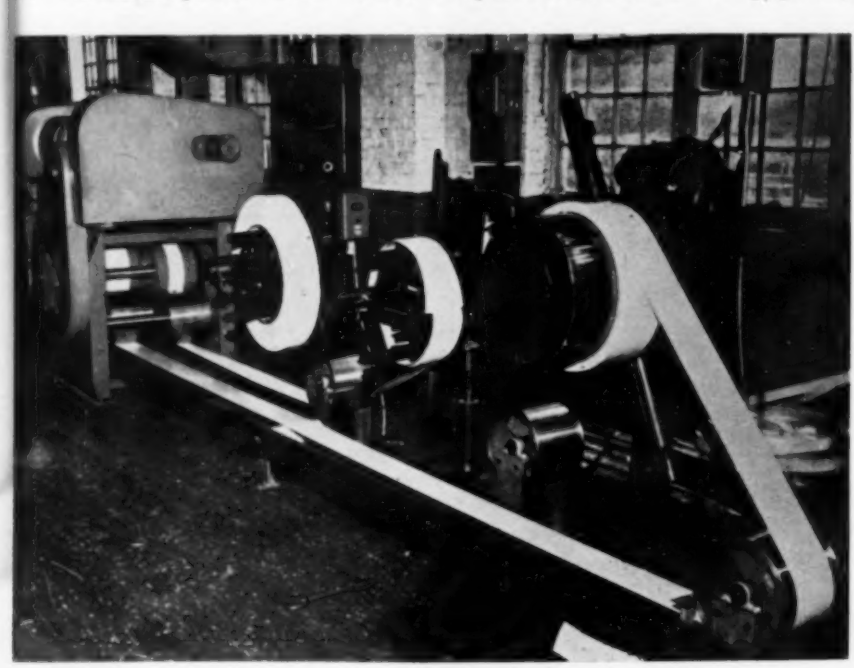
AHON

This includes textiles, plastics and strips made from certain synthetic materials. Production capacity of these machines is limited only by the drying time of the coating material and the length of the oven.

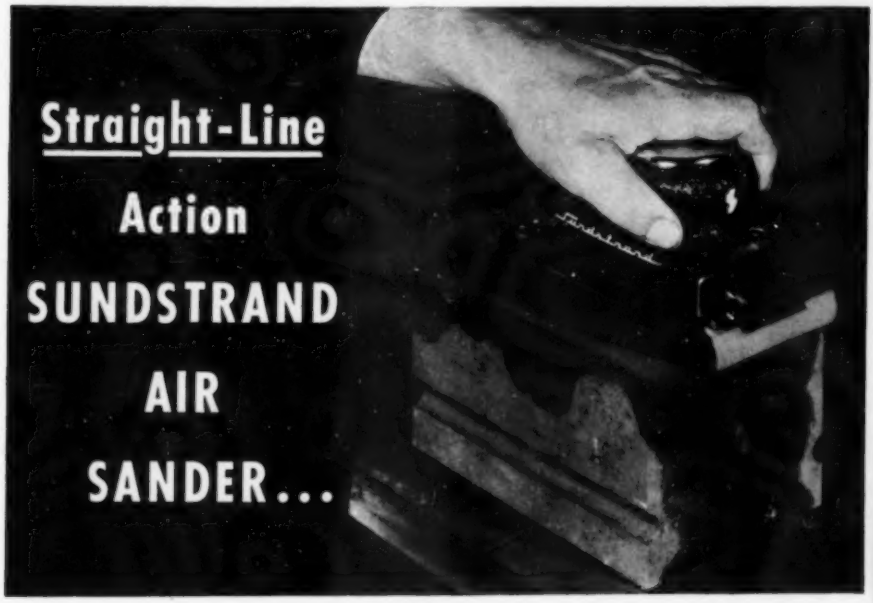
Rollers of Steel, Rubber, Gelatin, "Non-Melt" Compo.

Several different types of rollers are used on roller coating machines. The surface of fountain rollers is generally synthetic rubber or some composition material; the surface of transfer or doctor rollers is chromium plated steel. On one-side coaters, the lower drive roller is also chromium-plated steel which presents a hard, smooth, long wearing surface that is easily cleaned.

The surface of applicator rollers on 2-side coating machines may be natural or synthetic rubber, gelatin composition or some "non-melting" composition. Which type to use depends largely on the coating material used, the scope of the work, production expected, the product and the results required. For some products that require an exceptionally heavy coating of certain materials, the surface of the applicator roll may be either rubber or polished steel helically grooved to control amount of coating material deposited. *(Continued on page 30)*



In this continuous roller coating setup, notice that two rewinders are used for each ribbon of sheet metal that is painted; this permits the finished coil to be removed without stopping the travel of the strip. Photograph supplied through courtesy of the Gasway Corp.



...reconditions dies in 75% less time than required for hand polishing!

Heavy dies used by The Washburn Company for flattening the stainless steel shanks on kitchen tools must be highly polished, free from scratches. Otherwise, imperfections show up in the finished products and dies must be replaced more often. Now, the Sundstrand Single-Pad Sander machine polishes dies in 75% less time than required for hand polishing. For solutions to *your* sanding problems on wood, metal, or plastics, see your nearby distributor or write for Bulletin IF-8.

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PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

One important thing must be remembered: The hardness of the rubber or composition material used has a direct bearing on the flow-out qualities of the coating material. Best results are usually obtained with a very soft rubber. Instructions about the care and maintenance of rollers should be obtained from the manufacturer, and these instructions should be preserved for future reference and carefully followed at all times.

Gelatin composition rollers are fairly inexpensive as to original cost; however, they cannot be reconditioned if they become distorted. They resist most solvents and, because they are soft textured, they provide excellent transfer characteristics. They cannot be used in the application of any water-soluble coating material, nor where room temperatures exceed 90° F., or in cases where cut stock is hot. For best results different rollers should be used for summer and winter coating.

"Non-melt" composition rollers resemble the gelatin composition rollers both in appearance and in certain other characteristics. They will withstand more heat than gelatin composition rollers; however, they cannot be used for water-soluble coating materials — and they cannot be restored to good condition if they become distorted or damaged.

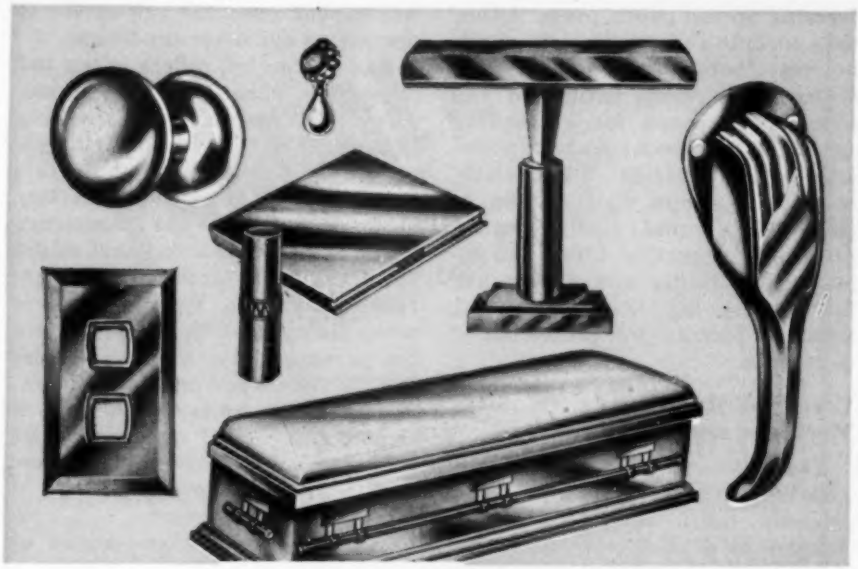
Choice of roller composition is highly important from the standpoint of cost, production and performance. The best policy to follow is to submit a sample of the coating material to be used, type of product to be coated, and quality of finish required, to the supplier of rollers. With this information available he can produce rollers of the correct material and formulation to give the desired results.

This typical roller coating installation is aligned in tandem with an oven wherein the coating on cut sheet stock is baked.

What Kinds of Work Are Roller Coated

Roller coaters are used extensively in the manufacture of cans for food and other products. They are used to coat the thin metal sheets before same are stamped and formed into cans. There is the protective inside coating; also the background color on the outside of some cans before same are lithographed. Roller coaters are frequently used to apply the protective back coating and the background color on metal signs for subsequent lithographing or silk screen processing.

Another important function of roller coating is to apply drawing compound to metal sheets prior to



NOW... simulate copper, brass and bronze on products like these with M & W PLATELUSTRE

Don't let critical metals put a *needless* crimp in your production!

Take zinc or steel—apply a coating of one of the new PLATELUSTRE finishes. You wind up with products and parts that look so much like copper, brass and bronze that *the eye can scarcely tell the difference!*

Whether you have been using now unavailable copper and its alloys for *making* products or for *plating* products, you will find these new M & W finishes *equally* effective in keeping your plant running. There are types for air-drying and baking schedules—pick the one that best fits *your* production requirements.

Let an M & W Technical Service Engineer show you—*right in your own plant*—how easy these PLATELUSTRE coatings are to use, and what striking effects they produce. Or, if you prefer, write for free literature.

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MANUFACTURERS OF INDUSTRIAL FINISHES

forming on the punch press. Other uses include the application of adhesives, both water-soluble and resinous, to paper, cardboard and composition board for subsequent application of flock; coating metal and wood venetian blind slats; coating aluminum siding used in the building trades; also, the waterproofing, fireproofing, filling and finishing of textiles and paper; and for coating flat sheets of metal, wood or plastics for protection or decoration.

Care and Maintenance of Machines and Rollers

The modern roller coater will give long and useful service if it is properly taken care of. At the completion of each run the reservoir, drip pan, recirculating pump and the doctor blade, along with all of the rollers should be thoroughly cleaned with some safe material.

Besides being kept clean, the machine must be properly adjusted and it should be oiled at regular intervals. How often this is required will depend upon the full extent of operations and other conditions.

The surface of rollers, when not in service, should be free of any pressure or contact with anything that might harm them in the slightest way. Follow the manufacturer's directions or recommendations about the use of any temporary liquid or peel-off coating that might be desirable to apply to the surfaces of certain types of rollers when they are to be out of service for perhaps a day or more. *Keeping the rollers protected and in perfect condition while they are not in service can be just as important as adjusting and operating them correctly while they are in service.*

Author's Note: In preparation of this article the writer received some help and cooperation from the following manufacturers: Samuel Bingham Son Mfg. Co., Black Bros. Co., Gasway Corp., Grand Rapids Panel Co., Rutherford Machinery Div'n. of Sun Chemical Corp., L. R. Wallace & Co. and John Waldron Corp.

DeVilbiss District Managers Return After Meeting

District managers of the DeVilbiss Co.'s Spray Painting Equipment Division, have returned to their headquarters throughout the United States and Canada to put into effect sales policies which were discussed at a recent week-end meeting with top company officials at the Toledo Plant.

The managers were briefed in selling conditions in today's rapidly changing economy. Henry M. Kidd, sales manager of the division, was chairman of the meetings and outlined future sales planning and organization of the division. He led discussions in the planning of new equipment and reviewed the present DeVilbiss equipment which is being widely distributed to both the civilian and military markets.

The district managers in attendance were: D. V. Perry, Newark, N. J.; R. F. Steele, Atlanta, Ga.; R. F. Whitell, Cleveland, O.; H. C. Cunningham, Detroit, Mich.; R. G. Petersen, Chicago, Ill.; and D. L. Bohon, Santa Clara, Calif. George Jacquemain, president of the DeVilbiss Canadian plant, also attended.

Silicone Laboratory

The Raymond C. Crippen, Research and Development Laboratories, Baltimore 2, Maryland, announce the opening of a new branch of the present laboratories at Fleet St. and Central Ave., Baltimore 31, Md. This laboratory will be used exclusively for studying silicones, methods of preparation, analysis, testing, uses and applications research and development. Sponsored projects are invited. This laboratory is known for its developmental work on high temperature coatings, studies on silicones in waxes, in waterproofing compounds, and other uses.

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ORIGINATORS AND MANUFACTURERS OF THE UNUSUAL IN *Industrial Finishes*

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Also special finishes to meet your particular requirements

Ask about—
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PHILADELPHIA 43, PENNSYLVANIA

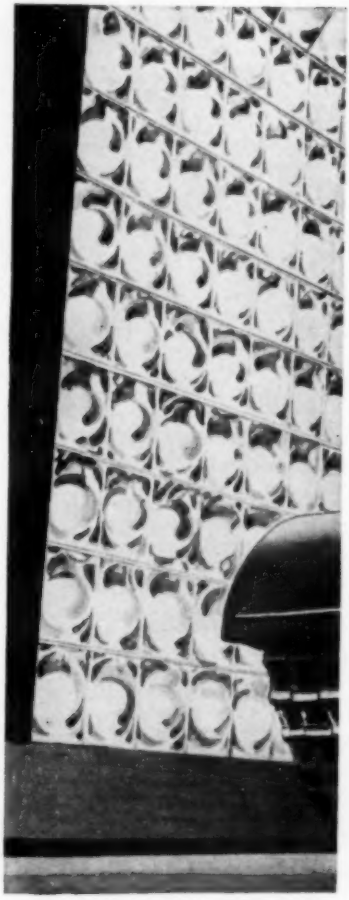
Speed for is the

When you move into defense production, military specifications are important, and you find you're fighting time schedules to meet production. So consult an Industrial Finishes Specialist. He can help solve some of your problems.

The nation's Industrial Finishes manufacturers have met new requirements and reduced finishing time for literally thousands of defense products. In the manufacture of tanks, for instance, Industrial Finishes Specialists helped cut production time by two weeks!

So call in an Industrial Finishes Specialist. Whether your problem is production for defense or production for civilian uses, you'll find he has a vast backlog of practical experience to help you meet new specifications, to cut finishing time, lower production costs, and to keep your products rolling off the line. Remember—in times of emergency as in normal times—more and more of your customers *start buying with the finish in mind!*

Be sure to consult an Industrial Finishes Specialist!



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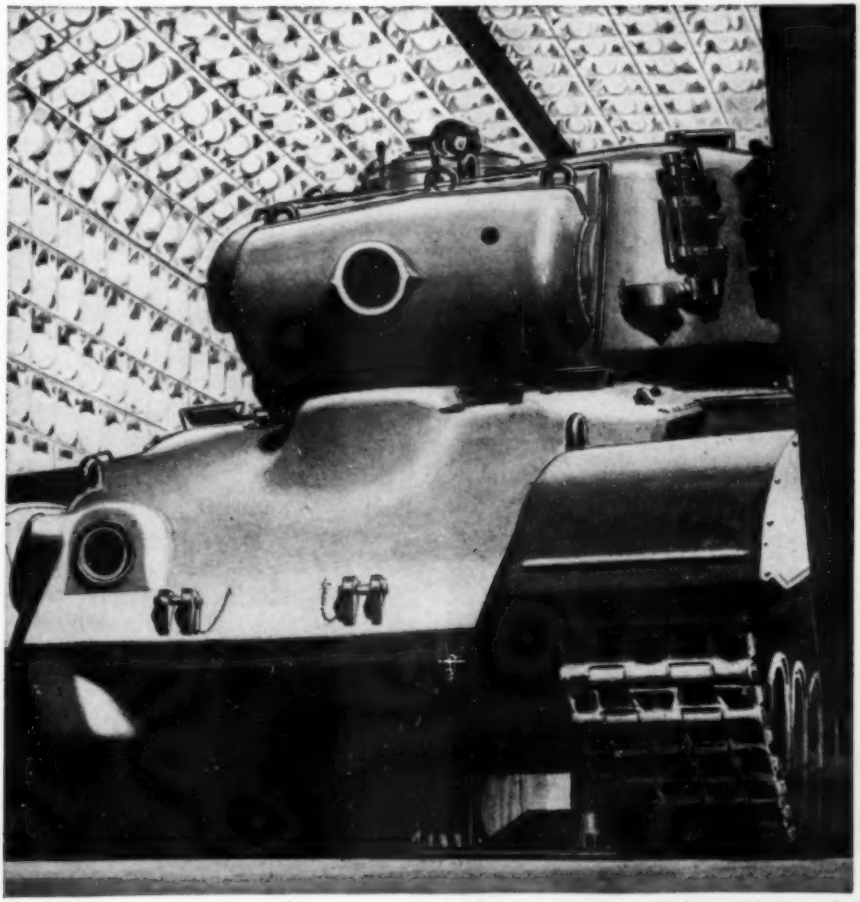
defense order of the day!



Drying finish on M-26 medium tank.

HAMMERTONE

Finishing at Iron Fireman

By HOWARD E. JACKSON

Operator at left sprays the insides of covers with plain solid color, then replaces them on tray, turns over filled tray to turn the outside faces up for the operator at right who is spraying the decorative hammertone finish.

Trays of instrument covers in spray booth; those in background are turned face down to present the inside surface for spray painting in solid color. Those in foreground are face up and have been sprayed with a hammertone finish which will be baked.

IRON FIREMAN, its main office and factory in Cleveland, Ohio, one plant in Toronto, Canada, and two plants in Portland, Oregon, has a complete line of heating and power equipment for all of the three fuels—coal, oil and gas. The Heating Control Division in Portland, Oregon, makes practically all of the controls for the entire company. Included in its output are such products as thermostats, pressure regulators, oil burner controllers, time switches, warm air regulators, stoker controllers and such other items as are needed on heating control equipment. Also included in the line of products are small electric motors ranging up to ⅓-hp. in size.

Protective and Decorative Coatings Required

Protective coatings of paint are required on all cases and covers for all controls, as well as on oil burner parts (housings, draft tubes, "doghouses" which are covers over deluxe burners, etc.); also on the inside of fan cases. Many of these items are painted plain green; some are painted plain green on the inside and hammertone green on the outside.

For some time now, covers for time switches and for hot and warm air controls (regulators) have been finished in hammertone but other items like room thermo-

stats and heat timers have been painted a plain gold bronze lacquer. They too will soon be finished in hammertone. The plant will continue to paint all motor parts plain green, changing to hammertone where there is good reason to do so.

The company's reasons for changing to hammertone finish are both esthetic and practical. Hammertone is attractive and it has a smooth glossy surface; in short, it has salability. Hammertone also hides any slight surface scratches on the products and it is easily cleaned. Getting the ball peen hammered effect depends upon the paint and the painter, but more about that later.

Paint Department is in Fireproof Rooms

The company's paint department consists roughly of two fireproof rooms set alongside of each other, and a fireproof locker room some 100-ft. away. All three rooms are in the main building. They have ceilings of reinforced concrete, plastered lightrock walls and fire doors equipped with fusable links. They are virtually explosionproof as well as fireproof.

Stove oil, lacquers, paints, thinners, etc., are stored in the locker room.

The main spraying and drying room is large enough to include facilities for dipping motor stator coils in black coil varnish. This area is complete with its own infrared tunnel and electric bake oven; these facilities are not used in connection with the painting of any of the parts; the area is supervised by motor assembly personnel.

Cleaning, Drying, Stacking Small Parts on Trays

Parts to be painted are moved into the paint room in various ways —by dollies, lift trucks, etc.—from production areas. Most items are degreased and immediately painted; some, however, are degreased,

Parts in wire mesh baskets are lowered into and lifted out of degreaser, to clean their surfaces in preparation for painting.

then welded and painted. Plated parts are degreased ahead of time. (A few items are not degreased, such as repair parts or parts that come back "from the field" and do not need degreasing. They are simply wiped clean.) Small parts are put in wire baskets and lowered into trichlorethylene for cleaning. Drying follows. *(To page 38)*

From this box of cleaned parts a workman is loading trays which will be delivered to the spray painters.

Cleaned parts are temporarily stored in large wooden bins near the degreaser; from here they can be removed and placed on wire mesh trays which are stacked one tray on top another on dollies. The number of parts that can be put on a tray, and the number of trays that can be stacked, varies; for example, 50 small thermostat parts can be put on a single tray. Motor housings which stand 1½-ft. high, and "doghouse" panels which are just under 3-ft. wide, must be painted individually. The 753 hot-and-warm air covers, shown in one of the accompanying pictures, are generally placed 12 to a tray, with six or more trays stacked one on top the other.

Spraying Technique; Timing; Handling

Loaded dollies are wheeled to the paint room and the trays are set on one or two turntables in a 9-ft. wide waterfall spray booth. One painter (at the left) sprays the interiors of covers with a plain green (or grey for some jobs).

These rectangular covers are sprayed from four directions, two passes each, the operator holding the gun at right angles to the surface being sprayed. A tray of 12 covers can be sprayed in less than a minute.

When the insides of the covers have been spray painted with a plain solid color (green or grey) the painter places the tray on a second dolly and turns over the covers, spacing them correctly for outside hammertone finishing. A second painter, at the right, sprays the hammertone finish. He can paint a tray load of 12 covers in a minute and 12 seconds, with 15 seconds allowed to ready the work on the trays. This second painter carries the completely sprayed trayful of covers to the baking oven. The timing and teamwork between the two painters means that one painter can concentrate on plain spray painting while the other works on hammertone finishing . . . with the time difference between the two types of painting allowing the first painter to help with positioning parts for the second.

Hammertone Spraying Produces Smooth Decorative Finish

A small spray gun of well known make, with No. 92 head and E needle valve is used for hammertone finishing. The gun is easy to handle . . . . works particularly well for spraying hammertone because the combination of large material orifice size and the proper balance of atomizing and fluid pressures causes the material to be applied in salt

ONE MAN OPERATION with BLAKESLEE METAL PARTS WASHERS

BLAKESLEE SOLVENT VAPOR DEGREASERS
—economical, efficient—
USE LESS SOLVENT

BLACOSOLV
Stabilized Degreasing Solvent — one price, one solvent *for all metals*

Blakeslee's new washer saves labor, is economical

Just one man can keep the production line going with this time saving metal parts washer. Turn table operation permits loading and unloading in one easy pivot movement. One revolution of the washer turn table and parts come out sparkling clean for a better finishing job with fewer rejects. Blakeslee washers are designed for every type and size of plant operation. Write for the cooperative services of our engineer-trained sales representatives.

G. S. BLAKESLEE & CO.

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New York, N. Y. Toronto, Ont.

and pepper fashion (in large drops; doesn't atomize down as much) giving a clean, well defined pattern.

In the hammertone painting of these boxes the trick is to start at the bottom of the inverted covers, spray all four vertical sides, then shoot straight down on the top flat side to eliminate overspray. Overspray would blot out the hammered finish effect and the pattern would not be definable. When the paint is properly sprayed onto the part, a correct hammertone finish is assured.

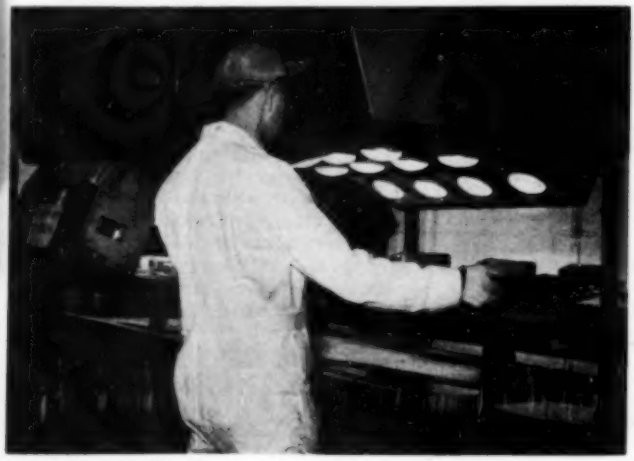
In an 8-ft. infra-red tunnel, with its two banks of 365-watt globes, the baking time is 15 minutes at 275° to 300° F. Better than 20 filled racks can go through the tunnel in an hour. The lighter items can be run through in eight minutes. The conveyor itself is 16-ft. long, and the variable-speed drive on the conveyor is a drive unit from one of the company's old coal stokers.

Baking enamel for the hammertone finishing is mixed for viscosity with synthetic enamel reducer. If the viscosity is too heavy a hammer effect will not be produced; if too light, the effect will be too thin. It must be just right.

All parts are painted inside and outside—except motors which are painted only on the outside. The handling, degreasing, spraying and drying procedures are the same for green, black, grey, etc. Gold is the exception.

Mixing of Paint Materials; Cleaning the Equipment

Bronzing lacquer and lacquer thinner are mixed to the right viscosity and then bronze powder is added to give the proper color, generally according to specifications. A typical proportion is one gallon of bronzing lacquer, one gallon of thinner and 26-oz. of powder. The parts finished in bronze or gold are air dried. *(Cont'd on page 42)*



Placing a tray load of spray painted parts on an apron-type conveyor which carries them through the infra-red tunnel where finish is baked.

for volume finishing

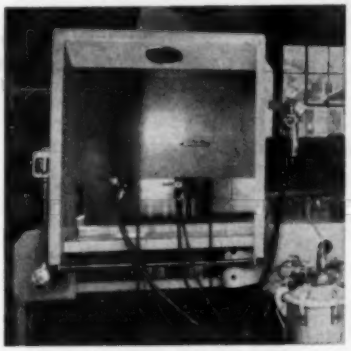
OF DEFENSE PARTS

CAPITOL HIGH SPEED

ELECTRIC SPRAY-BAKE

CONVEYOR MACHINE

It will accommodate pieces of from less than 1-in. diam. to over 12-in. diam., which require a high quality finish, such as shell noses, cartridges, weapon parts, also clocks, pens, pencils, door knobs, etc. Positioned on work holders, pieces are automatically sprayed, travel on through a drying chamber for solvent evaporation, and then into electric strip-heated bake oven from which they emerge for a cooling period before being removed.



View of booth showing automatic spray guns — lower view shows conveyor arrangement and drying and baking compartments.

Recommended for speedy, high quality production, and exceptional savings in coating pieces of various sizes and shapes that are difficult to handle.

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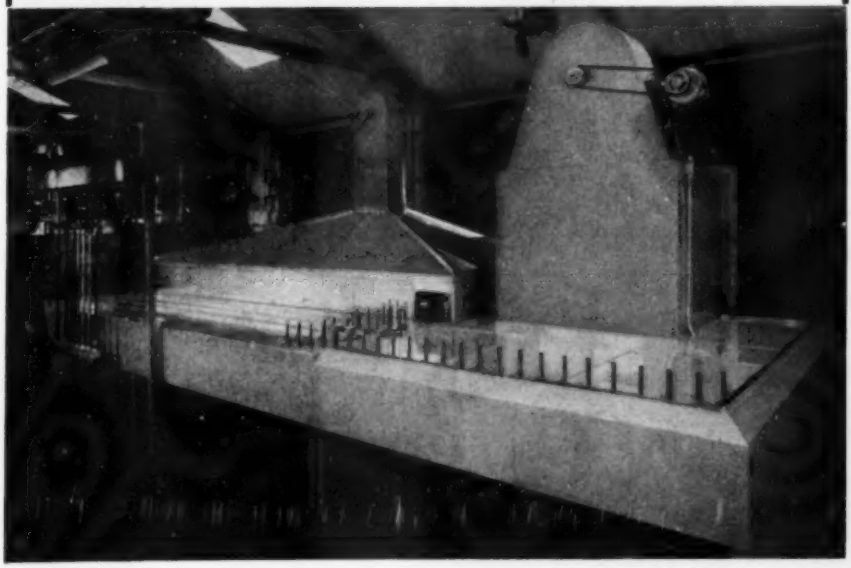

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MATERIALS • METHODS • SERVICE

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Paint is mixed by hand paddles in 5-gallon cans. Colors are predetermined at the factory. In the paint area there are three 2-gallon pressure tanks, one each for black, green and gold bronze, and one 5-gallon tank for hammertone green. The spray guns are used continuously. Guns are cleaned in paint and lacquer thinner. A compound is used in the spray-booth water; the spray booth is cleaned once a week. Any fumes and smoke from the oven-tunnel are carried out by way of exhaust ducts.

At discharge end of conveyorized infra-red tunnel, trays of bake-finished parts are transferred to rack for temporary storage.

After parts come out of the infra-red tunnel they are air cooled on wooden trays which are stacked in tall racks. From there they go to sub-assembly, final assembly and to packing and shipping.

Clearer TV. Clearer television pictures, with greater contrast between light and dark areas, are foreseen with a new transparent screen for picture tubes, developed by scientists of the General Electric Research Laboratory.

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SPECIFICATION NUMBER	CONFORMING MATERIAL
MIL-C-5541 (see also QPL-5541-1)	Lyfanite
MIL-S-5002	Lyfanite
MIL-C-10578	
Type 1	Metalprep Nos. 77, 102—Alumiprep No. 1
Type 2	Metalprep Nos. 10, 15—Alumiprep No. 20
JAN-C-490—Grade II	
Type 2	Emulsoprep
Type 4	Metalprep, Prep-Pik-L, Alumiprep, Prep-Rite
Type 5	Metalprep, Alumiprep, Prep-Pik-L, Prepwash
Type 6	Emulsoprep No. 710-E.C.
U.S.A. 3-213	(See MIL-C-10578)
U.S.A. 3-192	Metalprep Nos. 28, 10, 15 Alumiprep No. 20
U.S.A. 98-20007	Metalprep Nos. 10, 15 Alumiprep No. 20 Prep-Rite No. 16
U.S.A. 72-53	(See AN-F-20)
AN-F-20	Lyfanite
	Metalprep Nos. 10, 15, 77, 102 / Alumiprep Nos. 1 and 20 — See MIL-C-10578
AN-E-19	Lyfanite
AN-C-170	(See MIL-C-5541)
TAC-ES-431	(See MIL-C-10578)
AXS-1245	(See JAN-C-490, Grade II)
Engineering Corps—T-1184	Metalprep No. 28
U.S.N.—Appendix 6	Metalprep

51-C

Send for Data Sheet • Advise Govt. Spec. Number

NEILSON CHEMICAL CO.

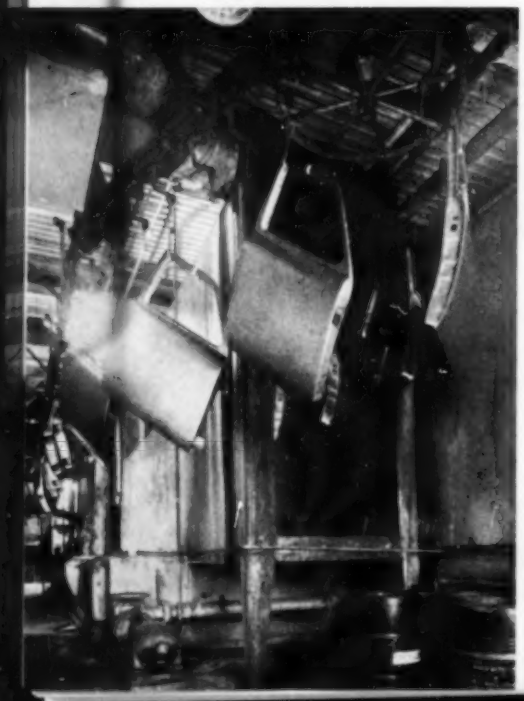
2682 Tecumseh Rd., Windsor, Ont. — 6562 BENSON ST., DETROIT 7, MICH. — 3411 Union Pacific Ave. Los Angeles 23, Calif.

Laminated Aluminum Finish
REPLACES NICKEL-CHROME

BY W. A. BARTSKI
Plant Manager, Parker-Wolverine
Division of the Udylite Corp.

THROUGH close co-operation and extended experimentation with a finish material supplier, we have developed an excellent baked enamel finish as a replacement for nickel chrome. This is not a substitute for chrome. It is a new finish in its own right.

A smooth, lustrous, light-silver gray metallic finish that will adhere perfectly to metal surfaces and which has durability (it's baked), has been developed for many protective and decorative uses, among them being a replacement for nickel-chrome.



This baked, laminated aluminum finish has good adhesion, is durable and, by test, it has a salt spray resistance of from 250 to 400 hours. It is suitable for use on both exterior and interior work. Unlike some metallic finishes it does not have that "grainy" look, but possesses the smooth luster of satin finished chrome. Later, I will explain just how this is obtained.

Regardless of whether the parts we finish are to be used indoors, or

---

Entrance to 5-stage setup where all parts are cleaned and rustproofed. The first two stages are on left, with U-turn at far end, then three stages in section to your right. Dry-off oven is farther to right.

outside where they will be exposed to all sorts of weather, everything goes through a 5-stage metal washer for a thorough cleaning and rust-proofing process—the latter a long known patented process of real merit. Solutions are sprayed on the parts at 25-lbs. pressure from four sides of the washer as they pass through, suspended from an overhead chain conveyor. The conveyor is driven at the rate of 18-ft. per minute, through a variable speed transmission. The 5-stage process includes the following:

1) Alkali cleaner (0.9% conc.)..at 160° F.
2) Hot water rinse.....at 140° F.
3) Rustproofing solution .....at 160° F.
4) Cold water rinse
5) Mild chromic acid solution..at 140° F.

Metal parts then pass through a gas-fired dry-off oven which removes all traces of moisture. They remain on the same conveyor to cool as they travel to the prime coating spray booth.

In the prime coating spray booth, parts in process are sprayed with a synthetic gloss primer to which has been added 7% zinc chromate. The zinc chromate is included merely as an added protection, and has no bearing at all on the laminated aluminum finish.

Gloss Synthetic Primer Plus 7% Chromate

The primer is used at a viscosity of 24 seconds at 78° F., as measured in a No. 4 Ford cup; it is sprayed at an atomizing pressure of 85-lbs. and a fluid pressure of 15-lbs. The fact that this brown primer is a great deal glossier than ordinary primer does have a direct bearing on the laminated aluminum finish, as I shall explain soon.

The operator at extreme right sprays gloss primer. Next two operators spray aluminum slurry after a flash time of 15 seconds. Parts are traveling from right to left. Photograph courtesy of Boydell Bros. Co.

Aluminum Slurry Sprayed Over Wet Primer

In the same spray booth, and after an elapsed flow-out time of 15 seconds, a spray coat of aluminum slurry is sprayed over the wet primer. This slurry is mixed in the proportion of one part aluminum paste to eleven parts of xylol. The resulting material has a viscosity of 11½ seconds at 78° F., when it's measured in a No. 4 Ford cup. The aluminum coat is sprayed at an atomizing pressure of 65-lbs., and fluid pressure of 7-lbs.

In this aluminum slurry the aluminum powder is as nearly as possible in its natural state. As a result, when the aluminum is sprayed

on the wet gloss primer (during flow-out time) the tiny aluminum flakes or particles arrange themselves uniformly over the surface of the wet primer where they remain, and are baked in that position. This is what produces the smooth luster of satin finished chrome; it is what makes this finish different from the usual metallic finishes.

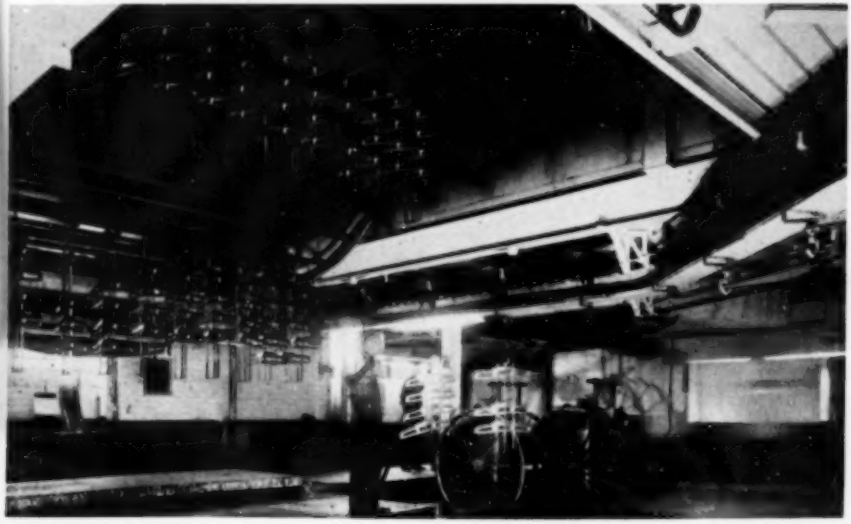
Primer and Aluminum Coats Are Baked Together

Just outside the spray booth, coated parts are transferred to an overhead crossbar type of conveyor which carries them into and through an A-type, gas-fired, convection oven where the combined prime and aluminum coats are baked for 27 minutes at 293° F.

I might explain here that the reason we use an overhead monorail finish conveyor from which parts are transferred to the crossbar oven conveyor is because we operate a custom finishing shop, and by this method full oven capacity can be attained, regardless of the size and shape of the parts going through. This is highly important both from the standpoint of economy and production.

Clear Synthetic Coat Sprayed Over Baked Aluminum

As finished parts leaves the oven they are again transferred from the cross bar oven conveyor to an overhead chain on which they cool for 12 minutes before they enter another spray booth. Here a protective top coat of clear synthetic



Transfer point where parts are moved from overhead chain to a wide crossbar conveyor which carries them through oven. Notice protective baffle board under overhead chain conveyor at right to prevent oil or dust from dropping onto wet parts. Photo, Boydell Bros.

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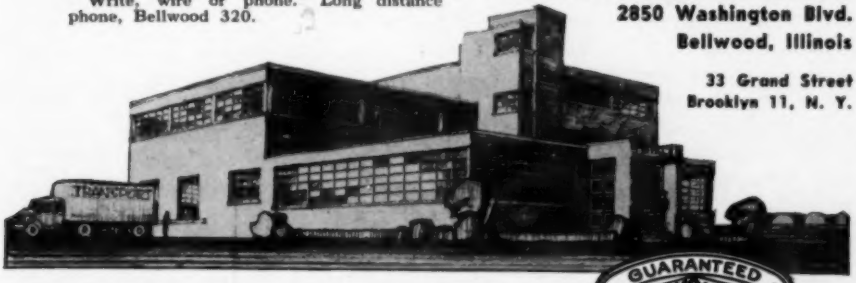
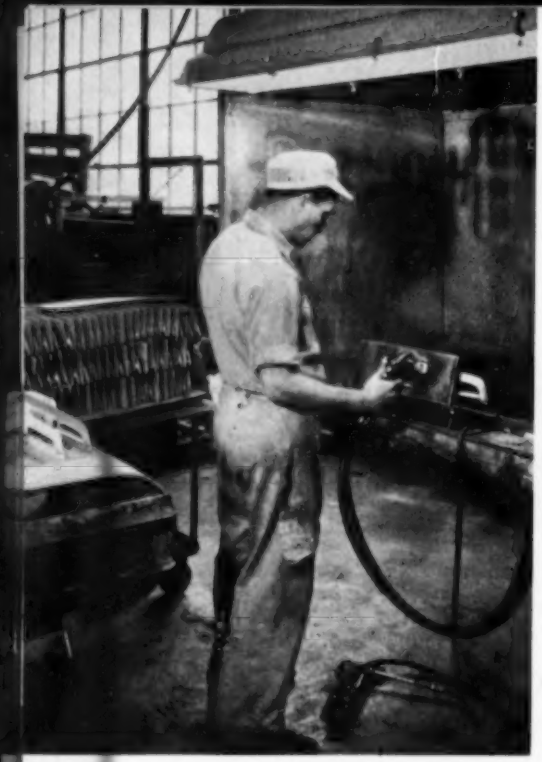


PRODUCERS OF WORLD'S FINEST FINISHES SINCE GUARANTEED NIKOLAS LACQUERS **1890**



Spraying colored lacquer through precision metal mask and onto an auto name plate. Air-operated clamps controlled by pedal on floor hold name plate firmly in mask for spraying. By this means color is applied only where it is needed. A conveyor belt carries parts through an infra-red electric oven.

is sprayed at a viscosity of 18 seconds at 78° F., (No. 4 Ford cup) using an atomizing pressure of 85-lbs., and fluid pressure of 15-lbs. The clear top coat is allowed a flash (air dry) time of six minutes when parts are transferred from the overhead monorail conveyor to the crossbar oven conveyor which carries them up to and through a gas-fired convection oven where the top coat is cured for 27 minutes at 293° F.

From the foregoing description you can readily understand the meaning of our term "laminated aluminum finish." Actually, the aluminum slurry is sandwiched in between gloss primer and the protective top coat of clear synthetic.

When finished parts leave the oven, some of them are transferred to another conveyor which carries them to the packing room where they are wrapped in paper and placed in cartons for delivery to customers. Other parts, such as automobile name plates and some trim items, are placed on tiered trucks and then delivered to our decorating spray booth.

Decorative Colors Sprayed Through Metal Masks

In the decorating spray booth, parts are placed in precision metal masks where they are held firmly in position by air-operated clamps while a decorative coat of colored lacquer is sprayed on to lettering or some design on the trim or part being finished. As these finished parts are released from the mask stand, they are placed on a belt conveyor, which carries them through an infra-red electric oven to quickly dry the decorative colors. The finished parts are then wrapped and placed in cartons at unloading station.

E. S. Massey Represents Hercules in Cleveland

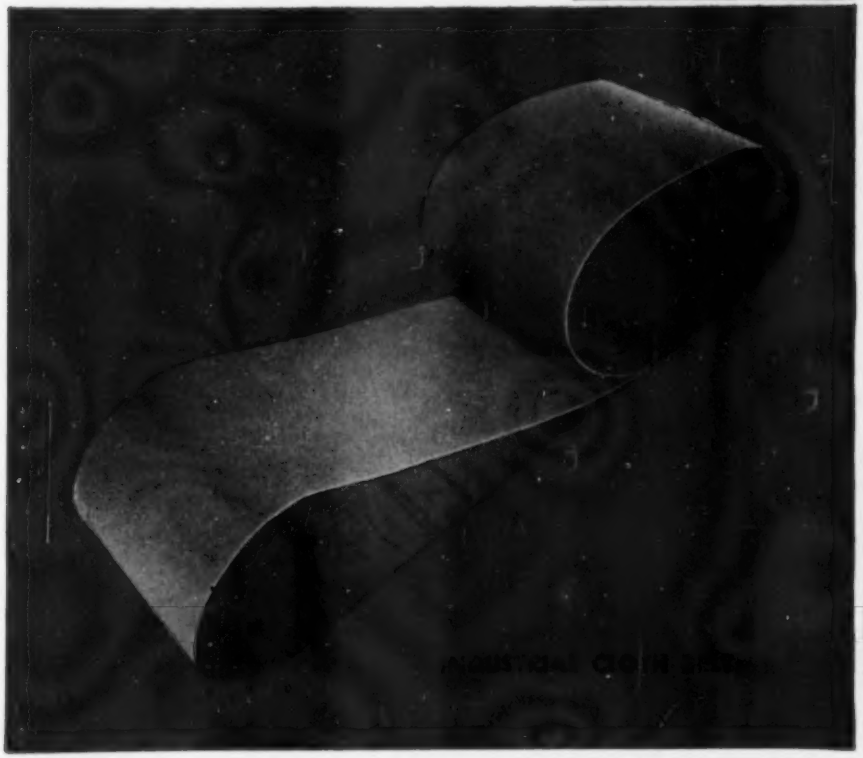
The assignment of Eugene S. Massey as technical sales representative in Cleveland for Hercules Powder Co.'s Synthetics Department has been announced. He will assist W. W. Trowell, manager of Synthetics' Cleveland office.

Mr. Massey joined Hercules as a chemist in October, 1950. Recently he has been preparing for his new assignment by familiarizing himself with various technical problems concerning the application of synthetic resins in protective coatings, adhesives, and other products.

Higher Production at Lower Unit Cost

Many metalworking plants report increased production at reduced cost per work piece, with Industrial Cloth Belts by CARBORUNDUM. A 33% greater output per belt is a recently reported result typical of many received regularly.

Industrial Cloth Belts by CARBORUNDUM feature sharp cutting action and extended belt life even under severe conditions of service. Your CARBORUNDUM representative can give you complete information—or write Dept. IF 82-111.



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82-111

Sandpaper Numbering

TO SOME USERS and buyers of sandpaper, the double numbering system for certain abrasive papers and cloths (more properly called coated abrasives) is somewhat confusing or, at any rate, not clearly understood.

The numbers ranging from 400 (very fine) down to 12 (very coarse) are mesh numbers. This system of grit size identification is employed by all coated abrasive manufacturers and covers all of the abrasive materials, silicon carbide and aluminum oxide (the man-made electric furnace abrasives) as well as the natural abrasives garnet, flint, and emery.

The dual system of grit size identification is a carry-over from the early days of coated abrasive manufacture where grain size was referred to as 1/0, 2/0, 3/0, etc., and before a standard screen mesh grading system had been adopted by the industry. For example, the grade known as "two/naught" (2/0) was given the decimal number of grit 100. *This meant that size 100 grit particles would pass through a screen having 100 openings to the linear inch* but would be retained by a screen having say 110 openings to the linear inch.

The dual system of numbering is applied to coated abrasives of aluminum oxide and garnet in the woodworking fields. Abrasives of silicon carbide and aluminum oxide designed for the metal, glass and plastics fields employ the single mesh markings only, (No. 100). Flint and emery coated products still are classified with the older "naught" coding, (2/0). Crocus cloth and paper are coated in one grit size only.

The accompanying table shows corresponding numbers of coated abrasives in the very fine and fine ranges, which are of chief interest to finishers. Still higher in the very fine ranges are numbers 500 and 600.

SILICON CARBIDE	ALUMINUM OXIDE	GARNET
400	400--10/0	
360		
320	320--9/0	
280--8/0	280--8/0	8/0--280
240--7/0	240--7/0	7/0--240
220--6/0	220--6/0	6/0--220
180--5/0	180--5/0	5/0--180
150--4/0	150--4/0	4/0--150
120--3/0	120--3/0	3/0--120
100--2/0	100--2/0	2/0--100

Corresponding numbers of abrasive papers.

Below the fine are medium (80 or 2/0 to 50 or 1/2), coarse (40 or 1½ to 30 or 2½), and extra coarse (24 or 3 to 12 or 4½).

The No. 100 or No. 2/0, for example, does not necessarily mean that all of the abrasive particles are the same size, but it does mean that the greatest percentage of them will fall within that particular size.

Information for this article was supplied by letters and charts from Behr-Manning Corp., Division of Norton Co.; The Carborundum Co., and Minnesota Mining & Mfg. Co.

R. W. Wallace Now Glidden's Sales Mgr. in S. F., Calif.

Robert W. Wallace has been appointed sales manager of the San Francisco Paint Division of the Glidden Co., Cleveland 14, Ohio.

A graduate of Williams College, Mr. Wallace joined the central trade sales division of the Glidden Co. in July, 1946, as a sales trainee. He was promoted to office manager in February, 1948, and in August of that year he was assigned to a trade sales territory in eastern Michigan, where his work was outstanding.

During World War II Mr. Wallace served as a Lieutenant in the Navy for three years.

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the wash primer that *stands behind* your finish

STANTITE Spraying Primer and STANTITE Clear Primer (for dipping) offer outstanding resistance to corrosion and rust creep, as compared with conventional wash primers. They provide excellent adhesion to all types of metallic surfaces and may be used with most types of top coats. Created for application under air-dried or baked finishes, STANTITE dries rapidly . . . is unimpaired by any baking schedules. Result: your finish looks like new through added years of product use. Find out now what STANTITE can do for your product . . . for complete information write today to the Stanley Chemical Company, 21 Berlin Street, East Berlin, Connecticut.

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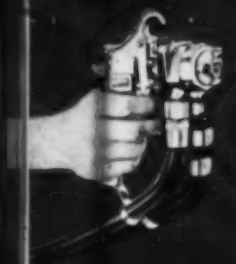

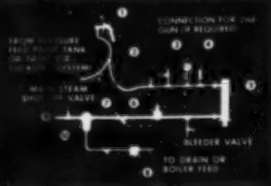

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DOMINION BRAKE SHOE COMPANY, LTD., NIAGARA FALLS, ONTARIO

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Gilder using a cloth screen to lay gold leaf on the clamped-up batches of book leaves. Four new books of gold leaf are lying on the portable leather-covered bench at his left.

Gold Leafing . . .

THE EDGES OF BOOK PAGES

Experienced and skillful gilder tells why edges of book pages are gilded and explains in detail the technique of preparing batches of assembled pages for gold leafing, applying the gold leaf, letting it dry and then burnishing the gold leaf with an agate-tipped tool.

[PAGE 54]

WHEN YOU see the gold edged leaves of a book—perhaps a bible or prayer book—you see not only a decorative coating of value and refinement but also a protective coating that definitely protects those pages from early deterioration due to long contact with dust and excessive heat or moisture in the air. Perhaps you have thumbed through an old book and noticed the brown stain that has crept back from the edge of the paper even into the printed matter. This happens in books that have not been protected by gold edges.

The process of book edge gilding has not changed since the first book was gold edged. It is strictly a hand craft operation, its success depending almost entirely upon the knowledge and care and skill of the gilder.

Preparing Book Edges For Gilding

Books come to the gilding room without covers, but with the pages stitched, the edges trimmed and the corners of the pages rounded. The pages of several identical books (without covers, of course) are arranged together in multiple and in two or more equal length rows. The edges of the pages are aligned perfectly even or flush and they are clamped tightly together in strong wooden hand clamps, as shown in the accompanying illustrations. As an aid toward making it easy to get the edges of book pages perfectly aligned and keeping them that way while pressure is being applied, a smooth flat plate of tempered hardboard is positioned directly under the opening between the clamp jaws. The edges of book pages rest on this plate just before and while preliminary clamp pressure is being applied. The tempered hardboard plate is then removed. Book pages must be centered within the jaws of the clamp so there will be no bending or buckling when final pressure is applied. Now the gilder faces what, for all practical purposes, is the edge grain of two or three solid blocks of paper. Each gilder operates six or eight of these hand clamps.

How Book Pages Are Put Into Clamps

When a batch of book pages are first put in the clamps, the backs or bound edges of the books are at the top, so the front edges point down and rest on the smooth level hardboard plate below. After final pressure has been put on, the entire loaded clamp is turned upside down so the front edges of the book pages are at the top or in "up position" convenient for the gilder to begin working on them.

After the front edges have been treated, and gilded, etc., clamp pressure is released and the position of books in the clamp is carefully shifted so the gilder can work on the top and bottom edges, just as he did on the front edges.

Applying Color to Edges; Rounding Corners

Reverting back to front edges of the clamped-up book pages, which present what appears to be the end

By Albert G. Bartolain, A. J. Cox & Co., Binders of Bibles

grain surface of solid blocks of paper, an alcohol-base color—orange or red or some other color, according to the customer's specifications—is wiped over the surface of the book edges. This color is what you see when a book is opened and part of the pages are bent back and allowed to riffle through the fingers. The color must be applied before any scraping or sanding is done to smooth up the edges; if it were applied after scraping, the color would not penetrate the paper sufficiently to be visible. This color is quickly absorbed by the paper to a depth of about 1/32-in.

The next operation is to hand cut the corners of the pages with a gouge type of chisel. These cuts are made in one direction so that the gilder can follow the grain of the paper in gilding. When books are received in the gilding room the page corners have been previously rounded by machine cutting, but the gilder has no way of knowing which way the cut was made on the machine.

Smoothing the Edges; Applying Glue Size

While the surface presented by the clamped-up edges of pages is fairly smooth it is not perfect—not smooth enough for the laying of gold leaf. A surface must be perfectly smooth to receive gold leaf. The gilder uses either a hand scraper or a portable belt sander to level off and smooth out all of the page edges and produce a perfectly smooth flat surface to receive the gold leaf. This smoothing operation is followed by cleaning the surface with a brush and vacuum cleaner to remove all traces of dust or shavings. Then alcohol-base color is wiped on the hand cut rounded edges.

Next a cooked flour paste, mixed with water, is applied to the surface to be gilded. The entire surface must be evenly coated, care being observed to avoid putting it on too thick, as this would cause the gold leaf to flake off. Perhaps any kind of glue size would serve the same purpose. In addition to sealing the paper edges the coat of glue size begins the building of a suitable surface on which to lay gold leaf. When gold leaf is to be burnished there must be no high or low places on the surface. Otherwise the burnishing tool would cut through and remove gold leaf at these places.

When the edge surfaces of books in all of the presses have been coated with paste, the gilder returns to the first press and adds a very thin coat of paste. Then, using a camel's hair brush, he applies a solution of water and muriatic acid (about one teaspoonful of acid to a quart of water) to the surface. Here again, care must be observed to spread just the right quantity of solution over the surface; any excess would run down on the sides of books in the press.

Laying Gold Leaf On Book Edges

While the surface is wet the gold leaf is laid on. Gold leaf is picked up by and released from a small flat cloth screen (stretched over a light wood frame) which the gilder passes over his hair first to charge the cloth with static electricity—and to pick up a trace of oil from the hair. The screen is held

Du-Pros SHELLAC

Strictly pure, of course, and carefully made from fine ingredients, Day's Shellac is trade-marked Du-Pros from the double process which produces the best shellac varnish.

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JAMES B. DAY & CO.

CHICAGO 14

Using an agate burnisher to give a brilliant luster to the gold. Holding the burnisher against shoulder aids in establishing a fixed position for the tool's working edge.

in level position about ½-in. above a sheet of 23-carat gold leaf. The thin gold leaf is attracted to the cloth screen to which it clings flat and taut until it is transferred to the wet surface of the prepared book edges. The transfer is made by holding the screen about ½-in. above the wet surface which attracts the gold leaf as a magnet attracts steel. A steady hand is required to hold the screen perfectly level so the gold leaf can be transferred into correct position on the wet surface. After laying gold leaf on all of the books, the gilder checks and repairs any misses by laying small pieces of leaf on these areas.

The cloth screen used for laying gold leaf consists of a thin wood frame over which an open mesh cloth, such as chiffon, is tightly stretched. Silk is not adapted for use on these screens. The cloth must be open mesh so the gilder can see through it to inspect the individual leaf of gold, seeing to it that no corners are turned under, that there are no cracks in the leaf, that the leaf is perfectly flat and is being positioned correctly for laying.

Burnishing Gold Leafed Book Edges

After gold leaf has been laid and pressed into close contact with the adhesive coated surface, a drying period of 45 minutes to an hour is allowed before it is burnished. It must not become too dry or it will

ZAPON Can Help You Meet Finishing "Specs"

DEFENSE ORDERS bring with them the problem of finishes that meet government "specs." You can get the help you need from ZAPON.

ZAPON technicians keep up to date on government specifications. They bring you finishes that not only meet government "specs" in the drum, but comply with all the performance requirements.

Let ZAPON *Service From Every Angle* help you set up your finishing department to fill government orders with speed and economy. ZAPON technicians will tackle any problem of "conformance" on your own production line.

Service from every angle . . .

that's ZAPON

ATLAS POWDER COMPANY

Industrial Finishes

Stamford, Conn. · North Chicago, Ill.

lose some of its luster. Just before burnishing, the gold surface is rubbed very lightly with beeswax. Then, using an agate burnisher, the flat surfaces are rubbed to brilliant luster. For burnishing the rounded edges we use a bloodstone burnisher which is not as hard as agate. It is possible to use an agate burnisher on these rounded surfaces, but extreme care would be necessary to prevent scratching the gold surface. The bloodstone burnisher does a better job if the rounded edges have been scraped. The harder the surface is the more brilliant the burnish will be.

The other edge surfaces of the books are gilded in the same manner, either by turning the press over or by turning the books in the press—whichever may be necessary.

Books Removed From Clamps; No Sticking

When edge-gilded books are removed from the press one can thumb through the pages and no adjoining pages will stick together. The adhesive used on the edges does not penetrate between the pages of the book due to the extreme pressure exerted by the clamps. It may and probably does penetrate very slightly the thickness of an individual page or sheet of paper; however, this would not cause one sheet to stick to another. Any sticking together of pages could only happen if the adhesive contacted the sides of the sheets, that is some of the surface between pages. As for the gold leaf having a tendency to hold one edge of a page to another, this is impossible as gold leaf is so fragile and thin and tears so easily that it couldn't hold anything together.

Before pressure is released on books in the press, the edge surfaces look like a solid block of gold that has just been burnished. The second that pressure is released, each page can be separated and, in fact, they will automatically separate themselves unless one holds the book pages tightly together.

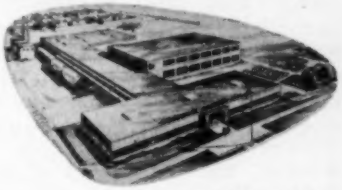
Gold leaf may only be applied by using a gilding screen or with a gilder's tip. For rather wide flat areas, such as blocks of book pages, the gilding screen does a better job of transferring gold leaf than the tip because the entire sheet of gold, or any section that may be cut from it, is held in a flat position against the cloth screen until it is deposited on the surface to be gilded. The gilding screen is not adapted for laying gold leaf on curved, moulded or ornamental surfaces. For this type of work the gilder's tip should be used.

Hot Spray Lacquer Used By Douglas Aircraft

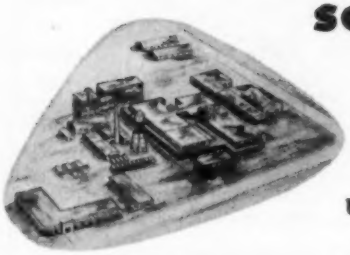
DOUGLAS AIRCRAFT CO. is now using hot-spray lacquer for finishing many metal parts, including aluminum, at the El Segundo, California plant. They say finishing time has been cut in half by the new process.

According to a report sent to Hercules Powder Co., manufacturer of the nitrocellulose ingredients from which lacquers are made, the use of hot-spray lacquer is growing steadily at Douglas. Their process engineers report a time saving equivalent to 27½ hours in finishing AD-4 air-

twice the service in half the time



Lafayette, Ind.



South Kearny, N. J.

Under today's Emergency Restrictions the thousands of manufacturers who rely upon EGYPTIAN to solve their finishing problems, are reaping the benefits of EGYPTIAN stepped-up production. When EGYPTIAN added the new ultra-modern Lafayette, Indiana Plant, to their already highly efficient South Kearny, New Jersey facilities, it became a matter of simple mathematics . . . two plants are capable of producing twice as much as one . . . thus doubling the service potential . . . two research Labs digging away at your finishing problem should find your answer in half the time. Now more than ever with TIME assuming almost equal importance with "Finishing Know-How" it will pay you to call in an Egyptian Sales Technician. The Egyptian Two Plant Set-up, making possible "Twice the Service in Half the Time" is one more reason why so many manufacturers know "It's Better Because It's Egyptian."

EGYPTIAN

INDUSTRIAL FINISHES

SYNTHETICS • VARNISHES • LACQUERS • ENAMELS

THE EGYPTIAN LACQUER MFG. CO.

BOX 444, NEWARK 1, NEW JERSEY

Plants: South Kearny, N. J. • Lafayette, Ind.

planes has been realized. Booth time alone was cut nine hours, or one third, with present crews and equipment. Where two coats of finish were required before, one coat of hot lacquer now gives the required film thickness. This eliminates "scuff-sanding" and the hazard of sanding through the finish on rivet heads and skin laps. In turn, this affords better protection in service.

In addition to the time saving factor, Douglas engineers reported the hot-spray lacquer process saved the equivalent of two gallons of lacquer and eight gallons of thinner per plane.

Thorough tests, to meet Navy specifications, proved to Douglas that hot-sprayed lacquer has better flow-out, decreases tendency to sag, blush or orange peel, and provides a smoother, glossier appearance. Salt spray and weatherometer tests showed the hot-sprayed film to be excellent.

The reduction of finishing time by an estimated 50% resulted in a definite increase in production, accompanied by a cut in finishing costs.

Color in War and Peace

ACCORDING to timely studies made by the Color Research Laboratory of Sun Chemical Corporation, colors may be mobilized scientifically to augment manpower in defense and wartime industrial production.

Functional colors are serving well in military establishments, and in Navy equipment. Color has been found to be singularly adaptable to situations requiring speedy action—in submarines for example.

In homefront industries functional color has proved its high value in increased production and worker morale. Color also improves safety and reduces accidents in plants of all types.

On training field and battle front, on battleship and bomber, color stands by to organize, simplify, and direct swift action.

In fact wherever the human eye is apt to err, or the hand to slow down with fatigue or confusion, new scientific color applications have been found to improve complex operations, to heighten speed and precision, to lessen strain and tension, and to increase work output.

Critical parts of fighting weapons are colored for instant location, and instrument boards in airplanes have colored lights and marks that distinguish functions, warn of danger. Even ammunition is marked in colors to identify different types of bomb and shell casings.—*Sun Chemical Corp.*

Haeuser Shellac Co. Announces Executive Appointments

Two executive appointments are announced by Clarence J. Schwab, President of the Haeuser Shellac Co., Inc., Brooklyn, N.Y. They are: John D. Baruc as Vice President in Charge of Sales, and A. Davis as Assistant Treasurer.

Mr. Baruc has been with the company since 1947, after serving four years in the Air Force. He covered the Long Island Territory in addition to supervising all industrial sales. Mr. Baruc will now direct all phases of marketing and promotion of the company's products.

Mr. Davis joined Haeuser in 1946, after returning from South America, where for a period of five years he was Chief Auditor for U. S. Army Engineers. He started as Haeuser's Office Manager and later assumed the additional duties as Purchasing Agent.

W. H. Geib, Superintendent of Glidden's Reading Plant

Mr. W. H. Geib has been appointed superintendent of the Glidden Co. plant in Reading, Penna. Mr. Geib, a native of Reading and a graduate of Lehigh University, became associated with Glidden in 1930 as a lacquer chemist. He has been production manager of the Reading plant for the past five years.

Robert Kempf, formerly of Glidden's Cleveland plant, has been named assistant to Mr. Geib; and Walter Herner has been transferred from San Francisco to Cleveland to become assistant to the general superintendent.

A NEW

N. N.

NACROMER N. N. **is excellent for simulated Metallic Finishes.**

We recommend it to lacquer manufacturers as a formulated substitute for . . .

GUN METAL
GOLD
BRASS
BRONZE
COPPER AND
SILVER COATINGS

NACROMER N. N. **is Concentrated, Stable, Non-corrosive and low in price.**

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"World's Largest Producer of Pearl Essence"

BIG FACTOR IN TURNING OUT A TRACTOR

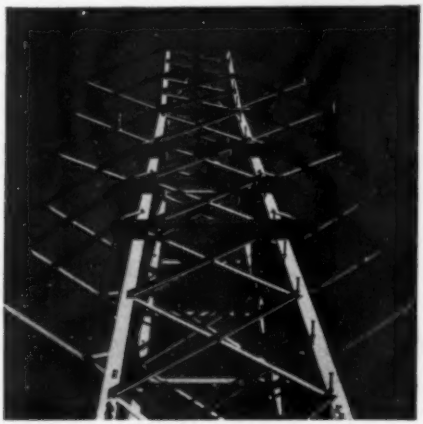
DULUX Tractor Enamel—typical of the 12,000 Du Pont finish formulas working for industry today

● DULUX Tractor Enamel is one of the many Du Pont finishes that has helped manufacturers turn out better products—faster—more economically. In the last twenty-five years, Du Pont chemists have developed more than 12,000 special-purpose finishes like this to serve a wide variety of industries.

Are you looking for a way to cut *your* manufacturing or maintenance costs? Are you looking for a finish that will make your product look better, sell better, last longer? You can get expert help on *any* finishing problem by contacting the Du Pont Finishes sales technician in your area . . . or by writing E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

HANDSOME FINISH FOR THE LONG PULL! With DULUX Tractor Enamel, tractors on a fast-moving production line can be finished from the bare metal up in the time it takes them to pass through this compact spray booth. After a short bake and final inspection, they go out to do their rugged jobs, with a rugged finish that will stand up in all kinds of weather.

NEITHER TOO THICK NOR TOO THIN! Finishes that have improper viscosity are difficult to apply, waste time and materials, produce unsatisfactory films. With this device, Du Pont chemists record the time required for a given quantity of finish to flow through a given opening . . . thus accurately control the viscosity of every Du Pont finish.



TWO-WAY PROTECTION FOR METAL! Wherever metal surfaces are exposed to the elements, DULUX Metal Protective Finishes combat corrosion two ways. DULUX Primers fight rust *chemically*. DULUX Top Coats form a long-lasting *physical* barrier to moisture. Mighty important protection when the replacement cost of the installation is considered!

FREIGHT CARS WITH SALES APPEAL! DUCO and DULUX Railroad Finishes, specially formulated to resist damage from smoke, fumes, cinders, weathering and hard knocks, are helping railroads make the right impression on shippers as well as reduce maintenance costs.

DEPEND ON DU PONT FOR BETTER FINISHES

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REG. U. S. PAT. OFF.

PAINTS • LACQUERS • ENAMELS • VARNISHES
THINNERS • STAINS AND SPECIAL-PURPOSE FINISHES
FOR INDUSTRY

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

Finishing and Decorating

ALL-METAL FURNITURE

BY ZACK LOGAN

Plant Superintendent, Logan Co.

WE MANUFACTURE all-metal summer furniture which, with ordinary care, will last a lifetime. Initial appearance must be attractive to capture the attention and interest of buyers, and the finish must be durable to withstand outdoor service. Production costs are of extreme importance for, after all, this furniture is a competitive item.

Metal furniture is only one of the many products we manufacture and finish, therefore the plant space allotted to finishing this line is necessarily limited. We have installed and are using a complete and efficient surface preparation, dipping and baking system in a space about 30-ft. wide by 400-ft. long.

One of the really important things that determines both the quality and durability of the finish is careful and proper preparation of the metal surface to receive its protective coating. The metal surfaces must also be treated for rust prevention and resistance to corrosion. This is highly essential in metal furniture.

Radiant Gas Burn-off Oven Removes Grease, Oil and . . .

All of this surface preparation work must be done efficiently and economically in the smallest space possible. We installed a 40-ft. long radiant-heat-fired oven—otherwise known as an infra-red gas oven—for removing drawing compounds,

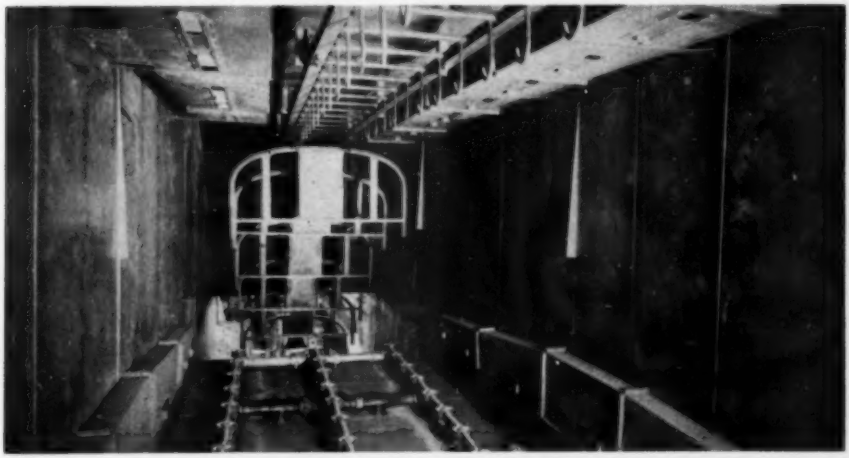
Spraying lacquer color through metal mask to decorate chair seats and backs. Parts are on turntable which is revolved so that the part is sprayed over an exhaust hood.

This compact conveyorized setup includes degreasing and bluing of steel surfaces in burn-off oven; dipping parts in synthetic enamel, baking the coating and spraying decorative lacquer through masks.

grease and oil from the metal and producing a rust inhibiting surface. This burn-off oven is 4-ft. wide by 6-ft. high in the clear; it is adjacent to but separated from a similar oven used for baking the enamel finish. Both ovens are elevated A-type, and each is served individually by a double track, crossbar conveyor, with bars 14-in. long spaced on 12-in. centers.

The conveyorized burn-off oven is equipped with three manifolds, each of which has 22 infra-red burners, making a total of 66 burners. Gas consumption on this oven is 1320-cu. ft. per hour of 1000-BTU gas at 6-in. to 8-in. water-column pressure, which produces approximately 1,320,000-BTU's per hour. Heat in the oven is held at 600° F., and with a conveyor speed of 7½-ft. per minute and hooks spaced on 12-in. centers, the oven capacity is around 3¼-tons of metal per hour.

Degreasing is accomplished by subjecting the metal furniture to 600° F. heat for six minutes. This heat raises the temperature of the metal above that at which oil, grease or drawing compound volatilizes, therefore the result is a completely dry metal surface. The process is especially effective in burning off the oils under lapped joints, seams and recesses. Otherwise, if any oil or grease remained in these close places it would probably be forced out in baking the enamel coat, causing a spoiled finish. [*To p. 68*]



Inside the burn-off oven, showing manifolds, infra-red burners and fresh air ducts . . . where the steel surfaces of products are degreased and blued. Photo, courtesy of Burdett Mfg. Co.

Produces a "Blue Steel" Rust-Resistant Surface

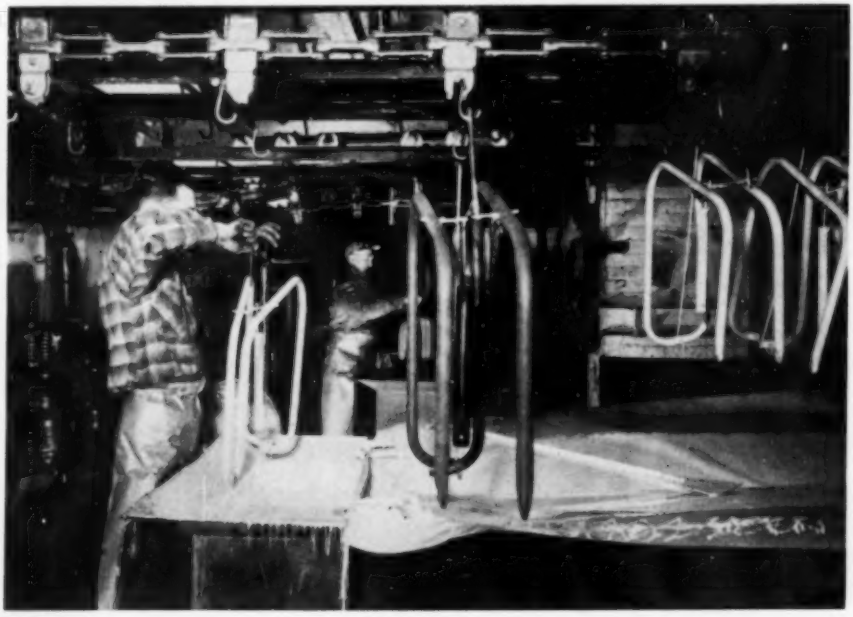
The metal surface becomes rust-inhibited in the burn-off process, taking on an iridescent blue color similar to that on a "blue steel" gun barrel. This oxidation penetrates into the metal to a depth of about 0.005-in., and provides an excellent surface for good adhesion of the baked enamel finish.

So that you may have complete information, the seats and backs of the metal chairs are made of 20-gauge steel, while the frames are made of 1-in. diameter 16-gauge tubular steel.

I have devoted considerable space to an explanation of our surface preparation setup because I consider it to be of the utmost importance for obtaining quality and durability of finish and for holding down rejects to a minimum.

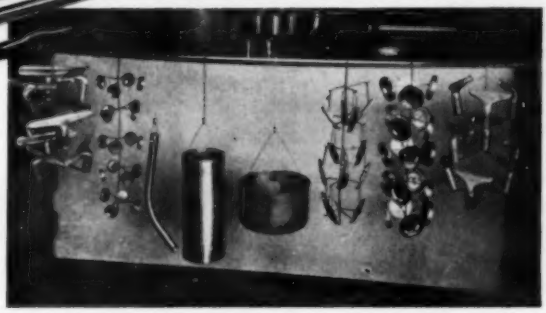
Dipped Synthetic Enamel Baked in Gas Oven

Our method of applying protective coatings to metal furniture is quite simple. We have two dip stations, one for backs and seats, and the other for frames and frame parts. Movable dip tanks, each of 50-gallon capacity, are used so that a change in colors can be made easily and quickly. We use synthetic enamel at a viscosity of 17 to 20 seconds (depending upon the color) at 78° F., as measured in a No. 4 Ford cup. The viscosity of the enamel in the dip tanks is checked



Tubular frames are dipped in the near tank, while seats and backs are coated in the far tank. Both tanks are movable, so colors can be changed. Notice convenient overhead conveyor.

PAINTING PARTS OF VARIOUS SIZES AND SHAPES POSES NO PROBLEM FOR *Ransburg* ELECTRO-SPRAY



This gives you an idea of extremes in part sizes and shapes handled by the Electro-Spray unit in the plant of Royal Vacuum Cleaner Co.

● Royal Vacuum Cleaner Co., Cleveland, was faced with this problem: How to handle, economically, relatively small batches of a wide variety of metal parts having diverse shapes and sizes.

After thorough tests and investigation, the company decided RANSBURG ELECTRO-SPRAY offered best possibilities. Now, the entire output of their finishing department is handled efficiently in a single, conveyorized, automatic spraying set-up.

Results even exceeded expectations. Royal maintains production with ⅓ of total labor formerly required. Records show 40% savings in finishing material. They achieve greater uniformity. Inventories are kept in balance. And, further economies are realized by lessening possibilities of damaging finished parts through multiple handling.

● Want to know what RANSBURG ELECTRO-SPRAY can do for YOU? RANSBURG engineers will analyze your specific finishing requirements. Call or write for more information.

RANSBURG ELECTRO-COATING CORP.

Indianapolis 7, Indiana

RANSBURG

at regular intervals throughout the day so that a proper balance will be maintained.

Furniture parts are hand dipped in the tanks and hung on a horizontal bar conveyor to pass over drip pans as they proceed to the bake oven. The enamel is baked for nine minutes at 300° F. in an infra-red gas oven. This 60-ft. long oven, like the burn-off oven, is 4-ft. wide and 6-ft. high in the clear and has 75 infra-red burners. Gas consumption is 750-cu. ft. per hour of 1000-BTUs of gas at 6-in. to 8-in. water column pressure, producing about 750,000-BTUs per hour.

Decorations Put on by Spraying Through Masks

Upon leaving the oven the parts cool as they travel to the decorating and packing room. Several large fans aid in the cooling. Just before parts in process pass the decorating turntable they are carefully inspected. Seats and backs that are to be decorated are placed on the turntable. A metal mask is placed over the seat or back. Then the table is manually revolved until the part is directly over an exhaust hood. Lacquer in contrasting colors is sprayed on the seat or back through the mask.

When the masked spraying is completed the turntable is revolved until the next item is in place, and so on. One operator sprays the color while his helper loads, fits masks into place, and unloads. The helper also keeps masks in clean usable condition by washing them in solvent at regular intervals. Metal parts are still warm when they are decorated. The decorating lacquer dries within three or four minutes so that seats and backs can be wrapped in kraft paper and placed in cartons with the frame for shipment.

Develops Color Lacquers for Aerosol Spray Containers

Prepared color lacquers, packed in aerosol-type spray containers, have been perfected and produced commercially after a year of research and development by Edward F. Helfer, president of Powr-Pak, Inc., 1488 Barnum Ave., Bridgeport, Conn. The new lacquer formulation does not clog the dispensing valve of the aerosol container, even if a partially emptied can has been standing many months. Pigment will not settle in the can, assuring true color for the entire contents.

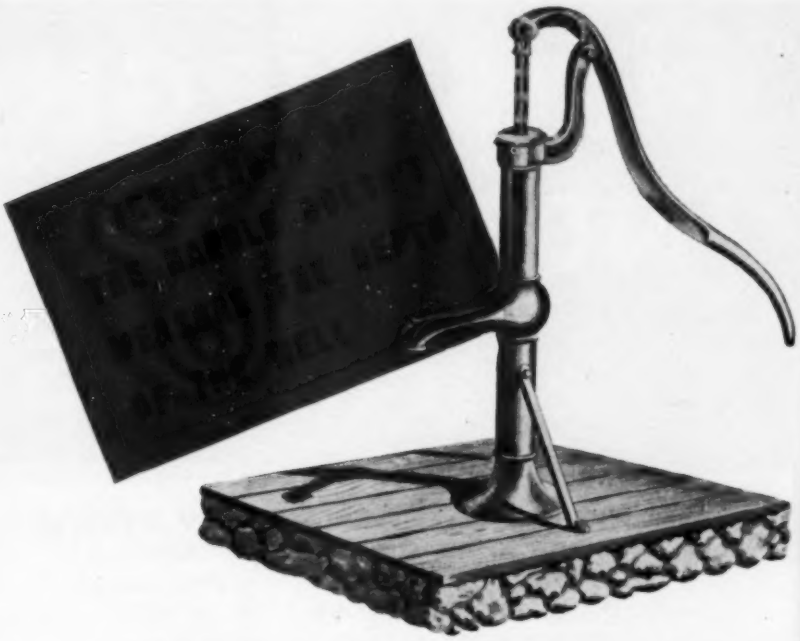
Mr. Helfer believes his color lacquers in aerosol spray containers will be a welcome service to manufacturers of furniture, automobiles, electrical appliances, machinery, etc. The Powr-Pak company is primarily a developing and packing organization and, not having any of their own products marketed, will welcome packaging their color lacquers under private brands. The lacquer dries in less than five minutes, which makes it ideal for quick touch-up jobs. If a second coat is desired for high gloss it can be applied almost at once.

McCormick is Egyptian's New Mid-West Sales Manager

The Egyptian Lacquer Mfg. Co. announces the appointment of Mr. George McCormick as Mid-west Sales Manager, located at the company's Lafayette, Ind., plant.

For several years Mr. McCormick has been a Sales Technician for Egyptian and brings to his new position, a well-rounded sales and technical experience background.

The announcement was made by Mr. Philip H. Beach, General Sales Manager, at a recent Sales Conference attended by Egyptian's Mid-West representatives, held at the Lafayette Country Club. Present at the meeting were Mr. O. J. S. deBrun, President of the company, Mr. John H. Whiteside, Chief Chemist of Lafayette, and Mr. Royal T. Brown, Chief Chemist of South Kearny.



The deep well of experience which enables Reliance to deliver the right finish for every job, can only be measured by the satisfactory performance of the finishes we have developed for many of the country's leading manufacturers.

If you have a finishing problem, we are ready to work it out for you. Our imagination and resourcefulness can probably help you find better, quicker and more economical methods and materials to boost your sales, increase your production and better your product.

Let us try, won't you?

For additional information address 4732 Crittenden Dr., Louisville, Ky.

PITTSBURGH INDUSTRIAL FINISHES

● **No matter what type** of protective coatings you need for your defense orders—Pittsburgh Industrial Finishes serve you best in a number of ways.

● **These famous finishes** do more than faithfully follow government specifications. Often they give you a plus over minimum requirements . . . provide longer service and better performance.

● **Pittsburgh** has the research and technical skill—as well as many years of experience in working with varied industries—to enable it to adapt specification materials that will assure trouble-free application under the production conditions prevailing in your plant.

PITTSBURGH PLATE

for your defense contracts

● **Add to these** advantages Pittsburgh's wide-spread facilities—which make it possible to supply finishes promptly everywhere—and you'll realize why Pittsburgh Industrial Finishes will best serve your defense production needs.

PITTSBURGH PLATE GLASS COMPANY
Industrial Paint Division, Pittsburgh, Pa.
Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Division, Detroit, Mich. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Division, Pittsburgh, Pa.

FREE ADVISORY SERVICE

Pittsburgh maintains a highly trained staff, with years of experience in working with industry, whose specialty is solving unusual finishing problems. Whenever you need help, a phone call, wire or letter will bring a Pittsburgh representative to your office for consultation—without obligation on your part.

GLASS COMPANY

Grain and Color Patching

Assistant finishing foreman in Southern Indiana cabinet plant explains a few things about the repair patching of mahogany and blond finishes on fine cabinets.

By Ralph E. Doolin

THE PURPOSE of grain patching or color patching is to cover and blend blemishes and sanded-through spots on furniture. The method here outlined has been used successfully for the past several years in Southern Indiana and probably originated in this area.

Although grain patching is sometimes done between lacquer coats, because the off-color spots are more readily seen after having been lacquered, it is generally considered a better practice to do this after sealer sanding. Then you will have two coats of lacquer over the patch, plus the advantage of the color added by the shading operation.

Prepare Ground Coat; Colors in Lacquer

Step one, in grain patching, is mixing the ground coat for the patch. The color for this should be approximately the lightest color of the wood (the color between the grain or pores). The ground should be prepared with pigment colors finely ground in lacquer. Never use spirit colors that have a tendency to bleed after lacquering. A good ground color for mahogany can be obtained from a mixture of black lacquer, Rose Lake and a small amount of red lead. Some experimenting will be necessary to acquire skill in mixing proper ground coats.

The mixture should be quite thin (using lacquer thinner) and should be applied carefully, using a small spray gun with the pressure not exceeding 7 to 10-lbs. Cover the defect entirely with color and blend the color out very lightly from the spot, in the direction of the grain. Due to the amount of pigment in the ground coat your patch may present a dull flat appearance It is now necessary to cover the patch and surrounding area with very thin lacquer to bring out its true color. (Use about one part lacquer to five parts of thinner.)

Technique of Graining; Stripes; Bands; Pores

The patch is now ready for graining. This is done with oxhair and sable brushes. I like a ½-in. oxhair brush for the large stripes and a small sable brush for the small grain. On mahogany, black is used for graining — black lacquer or black shading stain. Either should be thinned with a small amount of lacquer retarder to slow up the rate of drying.

The small pore lines are applied with a small brush to simulate the lines in the surrounding area. The dark bands are applied with the

Hot Lacquer

PUBLISHED PERIODICALLY BY HERCULES POWDER COMPANY IN THE INTERESTS OF BETTER FINISHES AND FINISHING

Douglas Cuts Finishing Time in Half By Using Hot-Spray Lacquer

New Process Adopted for Production of Navy Aircraft at El Segundo, Calif.

Douglas Aircraft Company (El Segundo Div.) has adopted hot-spray lacquer for finishing of many metal parts, including aluminum, at El Segundo. Use is growing steadily, because of savings such as these:

Time-saving equivalent to 27½ hours in finishing AD-4 airplanes.

Booth time cut from 27½ hours to 18½ hours with present crews and equipment.

Equivalent of 2 gallons of lacquer and 8 gallons of thinner saved per plane.

Hot-spray method, with only one coat, removes hazard of sanding through the first coat of lacquer on rivet heads and skin laps.

The conclusions which led Douglas to use hot-spray lacquer for Navy production, based on thorough tests, were:

1. Required film thickness can be applied by one hot cross coat where two cold cross coats are necessary.

2. Salt spray and weatherometer tests show the hot sprayed film to be superior.

3. Smoother and glossier appearance.

4. Eliminates sanding between coats.

5. Affords maximum uniform film thickness over rivets and seams, by elimination of scuff sanding, thereby giving better protection in service.

This AD-4, built by Douglas for the Navy, is one of hundreds on which hot-spray lacquer is used to cut finishing costs and time.

6. Reduces application time 50% with a resultant increase in production.

7. Saves materials by less over-spray and less solvent required.

8. Has better flow-out and decreases tendency to sag, blush or orange peel.

FREE BOOKLET ON MILITARY LACQUER

Hercules offers a new booklet, "The Case for Lacquer in Military Procurement," which summarizes the progress made in lacquer since World War II. It is designed to help you evaluate modern nitrocellulose lacquers as a protective coating for military production. Send for your copy today.

HERCULES POWDER COMPANY
INCORPORATED
Cellulose Products Department
928 Market St., Wilmington, Delaware

CL51-7

larger brush, using the graining material very thin. Frequent coats of the thin lacquer are sometimes necessary to bring out the colors. In order to emphasize any light streaks in the wood and carry them through the patch, a light colored graining material may be mixed, using vermillion red and red lead; this must be extremely thin and must be applied very carefully, following the natural stripe of the wood.

Blending the Patch; Adding or Taking Away Red

After having applied the small grain lines to match the surrounding grain, and having drawn the light and dark stripes of the surrounding area through the patch, the patch should be further blended by applying the ground coat across the complete panel, this should be applied very lightly (a fine mist). Too much material here ruins the patch and gives the panel a painted appearance. At this point it is possible to give the panel an appearance of more red color, if necessary, with a very thin mixture of oil red concentrated powder, with lacquer thinner and a bit of lacquer for body.

On the other hand the appearance of too much red can be remedied with a thin mixture of oil yellow concentrated powder, and a pinch of Prussian blue thinned with lacquer thinner. Practice in coloring and graining of the darker woods will lead to skill that can be used successfully in patching blond and lighter woods. Always remember to use non-bleeding pigments ground in lacquer.

The appearance of a panel and a grain patch can be very much a matter of perspective, so care must be taken to view the panel from several angles while the patch is being applied. A patch skillfully applied will be undetected after finishing, and can be the means of saving expensive panels that otherwise would be scrapped.

Binks Free Spray Painting Classes Begin in September

In September, Binks is reopening its spray painting school. Classes will be held during the first full week of each month, except July and December, from 9 a.m. to 4 p.m., Monday through Friday. The schedule of classes for the fall 1951 sessions is:

September 10-14 inclusive
October 1-5 inclusive
November 5-9 inclusive

The Binks Spray Painting School is especially suitable for training officials and supervisors. Classes are limited to 12 persons so that each obtains a maximum of personal attention from the instructor. Furthermore, classes are composed of men with similar interest. Thus, furniture manufacturers and automobile manufacturers are in separate classes, as are porcelain finishers, paint manufacturers and so forth.

However, Binks points out that enrollment is not limited to company officials and supervisors. A company can send anyone it believes will benefit from the training.

During the 5-day program, each member of the class examines and discusses the operation, maintenance and repair of spray guns. Men who have never used a spray gun before are taught correct spray painting methods. Trouble-shooting gets a lot of attention. The common causes of faulty spraying are described and methods of avoiding or correcting them are clearly explained. Several sessions deal with the automatic spray guns that are the heart of many automatic finishing systems. The practical applications of spray booths are also studied. By Friday night, everyone is well acquainted with the construction and operation not only of spray guns, but also with such important accessories as oil and water extractors, air compressors and portable painting units.

No tuition is charged. However, each student is expected to pay his own transportation to Chicago and his own expenses while in the city. Applications from those wishing to attend a session of the Binks school should be made two or three weeks in advance of class dates so that appropriate reservations for hotel and other accommodations can be provided. Write Mr. E. F. Watts, Binks Mfg. Co., 3122 Carroll Ave., Chicago 12.

AN EXACT SCIENCE

THERE'S NO "by guess and by gosh" about Spruance Quality stains, fillers, sealers, lacquers, synthetic enamels — primers, paints and varnishes. Every step of their making is laboratory controlled and supervised throughout.

You are assured of dependable uniformity every time. Spruance products are production proven — and are being used by the largest processors of wood and metal finishes in the country. The years have demonstrated their worth, workability and economy.

Our laboratory is prepared to help you work out your requirements. Bring your problems to us.

LACQUERS
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THE GILBERT SPRUANCE COMPANY
PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

A BETTER PRODUCT!

30% to 50% Less Cost!

Less investment in inventory.

Greater production in less space.

Reduced physical labor attracts better help.

Some instances entire plant production has increased as high as 30%.

Trained engineers will lay out systems tailored to your product without charge.

Investigate!

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Finishes formulated in our Creative Studio
are of a comely nature, too. They are distinctive,
appealing, sales-inspiring. If you have
a finishing problem — or if you feel your present
efforts do not measure up to the stand-
ards you believe should exist—permit us to prepare
a tailor-made coating for you. There are
no strings attached.
Avail yourself of our service now!

No Tampering with Quality

ROCKFORD VARNISH
Company
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Manufacturers of Protective and Decorative Coatings

Affiliate
GORDON BARTELS CO.
Roller Coating Specialists

Preparing Metal Surfaces

I would like to get a reprint of an article that appeared in October 1950 issue, entitled, "Preparing Metal Surfaces for Painting". —D.&N.

No reprints are available but we happen to have an extra copy of that issue and we are sending it to you.—*Editor.*

Spot Blending White

We are a newly organized company, refinishing and spot blending refrigerators and other white appliances. Having been a reader of your wonderful magazine we are sure you can aid us in our problem.

We would like to know of a few manufacturers who could supply us with various shades of white for spot blending these appliances.—*G.J.M.*

In a letter we are naming several sources of supply.—*Editor.*

Dipping Machines

Will you please tell us the names of manufacturers of dipping machines that could be operated as an independent unit in combination with an already existing overhead conveyor?

We would like to get the names of those engineering or manufacturing concerns who are situated on the eastern seaboard, or those who have engineering services in this area.—*P. G. Corp.*

In a letter we are naming several concerns who can probably take care of your requirements.—*Editor.*

Changes Color By Heat

A paint that changes color with an increase in temperature is described in Industrial Finishing for March 1951, page 122. A material of this nature would aid in the processing of aluminum during baking for moisture removal. Such a coding would establish whether each piece of aluminum has been through the baking process. Please indicate the source, the basic colors and other information available for this paint.—*D. P. Co.*

This item came to us from Tempil° Corp., 132 W. 22nd St., New York 11, N. Y. We suggest that you write them direct.—*Editor.*

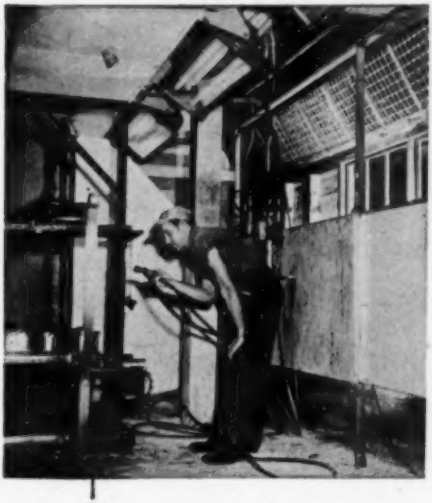
Electrostatic Spraying

I have just finished reading the fourth chapter of P. C. Bardin's article on electrostatic painting. Since we contemplate changing our spray booths over to electrostatic painting, I would appreciate you sending to my attention, the preceding three chapters of this article.—*H. F.*

Copies sent.—*Editor.*

We are Interested, Too

Your June 1951 issue (page 84) carried two requests for information concerning sandblast equipment for the removal of old finishes, prepara-



Filtered Air for finer finishes

FINE FURNITURE of solid maple and cherry is a tradition with Consider H. Willett, Inc., Louisville, Ky. Every production detail must measure up to the highest standards—and that includes filtered air for spray booths.

Pictured here is a pressurized spray room where the final varnish coat is applied. Outside air is first drawn through AAF Type MW4 viscous type filters. It then passes through the AAF Throway* filters, shown at upper right of illustration, which not only serve as after-cleaners but distribute the air evenly throughout the entire working area.

Clean air can both help you save money and improve product quality. AAF's complete line of filters offers a solution for every air cleaning problem. For complete information, call your local AAF representative or write direct to

AMERICAN AIR FILTER COMPANY, INC.
210 Central Avenue, Louisville 8, Ky.
In Canada: Darling Bros., Ltd., Montreal P.Q.

AAF
AIR FILTERS
AND ELECTRONIC PRECIPITATORS

**Replaceable type air filters.*

tory to refinishing. We are also greatly interested in such a process, having heard about that method recently.

We would be grateful for the same information. Kindly bill us if there is any charge involved. Thanking you for your attention to the above, and complimenting you on your very fine and informative publication . . . . *I. F. F. (Factory Rehabilitation of Hotel and Institutional Equipment).*

Information given by letter.—*Ed.*

Touch-up Kits

In a copy of Industrial Finishing Magazine, dated April 1950, I've read one of the Letters from Readers concerning a "Touch-up Kit". I also would like to know the names and addresses of firms handling a touch-up kit.—*L.Z.*

Information supplied.—*Editor.*

Air Dry Crackle Finish

We are interested in obtaining all the information possible on "Rime-Cote," an air-dry Crackle Finish, as publicized in an article in December 1949 issue of Industrial Finishing.

Due to the expansion of our plant and the step-up in production, we are looking for new means of a quick painting process, and a sample would be greatly appreciated.—*G. R. Corp.*

The name and address of the firm appeared in the article you mention. In a letter we are giving you this information.—*Editor.*

Finish for Ornaments

Referring to a letter from readers entitled, "Christmas Tree Ornaments", July issue, page 84, we would be pleased to contact the D. J. Co., since we have been selling that type of finish for years.

Would also like to contact the N.S.Co., "For Plaster Ornaments", to furnish them with our porcelain glaze finish for plaster ornaments. —*J. Landau Co.*

Names and addresses supplied by letter.—*Editor.*

Decals; 3M Co.

There is some company that makes decals on which numbers or names can be written or stamped, and then it can be stuck on the article. Please let me know what company makes this type of decal.

Also, please send me the address of the Minnesota Mining & Mfg. Co.

We are not sure which concern makes or sells decals such as you describe. In a letter we are naming several decal firms.

Address of 3M Co. is 900 Fauquier Ave., St. Paul 6, Minn.—*Editor.*

Shellac Books Limited

Mr. James A. Greive, N.S.W., Australia: The Editor of Industrial Finishing Magazine has forwarded us your letter of July 17th in which you ask for a copy of the "Shellac Manual for the Master Furniture Finisher".

We sincerely regret that it is impossible for us to send you a copy of this book. It is a costly looseleaf book, for which additional chapters will be periodically distributed, and we only obtained a sufficient supply thereof to enable us to send one copy to each furniture manufacturer doing business in the United States or Canada.

We have received many requests for this book from furniture manufac-

"THEM REVENOORS SHORE BEEN NICE SINCE PAW CONVERTED TO PAINT THINNER FOR THEM *VEDOC* BOYS"

It wasn't so long ago that the raw material situation was just about this tough. But during that period of shortages, there was no change in the high quality of DEFENSE PAINT that came from Ferro's shipping docks.

Whether your orders were for gallons or drums, the formulation that made up your particular order never varied. You still got the best possible government specification finish, for your particular finishing operation.

When you bid on Defense Orders calling for specification finishes, remember the experience and production facilities that Ferro can offer, to make your finishing job the most efficient part of your production line.

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LIQUID PLASTICS DIVISION
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turers abroad and from persons and concerns who deal in shellac or who are otherwise interested therein, here and abroad, but we have been compelled to deny them, since otherwise we would shortly be unable to send a copy of this book to the hundreds of domestic furniture manufacturers who are continuing to apply for it.

We trust that you will appreciate the circumstances which make it essential that the distribution of this book be confined to the extent above stated.

However, we are sending you a copy of "Shellac—How to use it", and trust that you will find it of interest and value.—*Shellac Information Bureau.*

Flock by Electrostatic

Will you kindly send us any information concerning the electrostatic application of flock, and advise where we may obtain the devices for this application?—*C. R. Co.*

We refer you to Vertipile, Inc., 650 Lawrence St., Lowell, Mass. We understand this company has taken over the electrostatic flock spraying process which was developed and patented by Behr-Manning Corp. of Troy, N. Y.—*Editor.*

I know it's just a clothing store dummy, but I just can't make myself pull the trigger; what would my dear old mother think?

Silicone Finish Wanted

We are interested in learning the address of James F. Nolan, who wrote the article in your January 1950 issue, page 26. We are not interested in a source to do the work, but are interested in a source to supply us the silicone material we could use to bake on our paper pouches.—*S. S. Co.*

In a letter we are giving you the names and addresses of a few concerns that have indicated they can supply silicone finishes.—*Editor.*

Spraying Technique Free

Would you please send us a reprint or photostat of an article entitled: "Spraying Technic" which appeared in Industrial Finishing for November 1944, pages 42, 44 and 48?—*M. & Co.*

You can get a new free copy of this from Bede Products, Inc., 4311 Ridge Road, Cleveland 9, Ohio.—*Ed.*

Food Can Varnish

In May 1951 issue, reference is made, on page 6, to a Tin Substitute. The second paragraph mentions an organic material especially designed for use in food cans and it is said to save more than 92% of the tin used in these containers. Will you please identify this organic coating?—*J.R.S.*

Several leading manufacturers of finishing materials can supply safe, sanitary, durable coatings for the interiors of food containers. In a letter

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FINISHES and LACQUERS

for WOOD and METAL SURFACES

COAST LACQUERS cost less because we pass along to you the savings made possible by our immediate contact with the huge chemical plants of the Gulf Coast from which we obtain our superior raw materials at low cost. Write for information and prices on . . .

FURNITURE FINISHES **INDUSTRIAL LACQUERS**
GOVERNMENT SPECIFICATION COATINGS AND THINNERS

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COAST Paint & Lacquer Co. Inc.

P. O. BOX 1113, HOUSTON 1, TEXAS

"I want it painted a sort of money-green—I have just struck it rich!"

we are naming the firms identified with the particular article to which you refer.—*Editor.*

Roller Coaters Offered

Will you please give us the names of the two concerns who are inquiring about roller coating machines (June issue, page 84)? We are interested in a concern that has a set of almost new Potdevin machines for sale.—*C. C. C.*

Information given.—*Editor.*

"Plextone" Finish

Some time ago we saw an ad in this magazine about Plextone paint. Could we have the name of the manufacturer? We are interested in that finish.—*C. Mfg. Co.*

It is a product of Maas & Waldstein Co., see pages 104 and 106 of Jan. 1951 issue.—*Editor.*

Dirty Lacquer Thinner

We are wondering if you could tell us the name of any company in this locality (Cincinnati, Ohio), to whom we could sell dirty lacquer thinner? We understand that there are companies who buy this.—*M.A.Co.*

Only ones we know of at the moment are the two who have small classified advertisements on pages 126 and 127 of July 1951 issue of this magazine.—*Editor.*

Roller Coating "Coils"

We are interested in roller coating strip (or coil) steel stock. We have just seen a setup for coating Venetian blind stock but there both sides are coated at once, the stock being pulled through the coater by a power-driven wind-up mechanism. The coater itself has no drive.

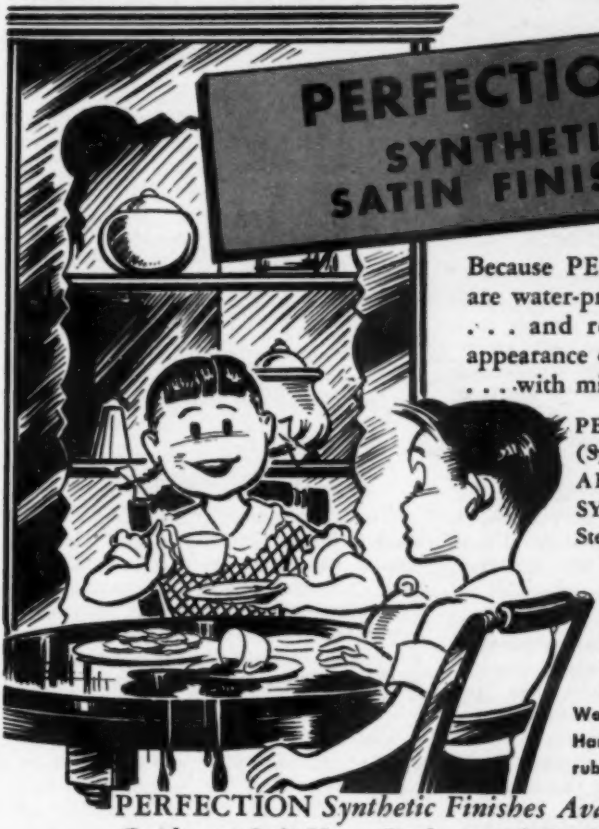
We will be coating only one side at a time. The coater has power-driven rolls, and a scraper to prevent the coating from getting on the back side. If we were to coat coil stock on such a coater, the wind-up drive, obviously, would have to be perfectly synchronized with the drive on the coater. We understand this is done quite commonly.

We are interested in seeing such a method. If you know of anyone in our vicinity (New York state) who is doing such work, we would greatly appreciate getting their addresses so we could try to arrange a visit to them. —*K. E. Co.*

Right at the moment we are not sure which companies may have such a setup in operation in your state. Suggest you read the illustrated feature article beginning on page 12 of this issue—and then write some of the roller coater manufacturers; they can probably tell you.—*Editor.*

Mamas DON'T WORRY

WHEN FURNITURE IS FINISHED WITH



Because PERFECTION finishes are water-proof . . . liquor-proof . . . and retain that beautiful appearance of hand-rubbed finish . . . with minimum care.

PERFECTION FINISHES (Synthetic or Lacquer Type) ARE FLATTENED BY SYNTHESIS rather than by Stearate or Other Foreign Flattening Agents.

Clarity of Gloss Lacquer even in lower sheens • Will either gloss or dull rub • Won't haze or sweat back • Has that rubbed effect without rubbing • Has a waxed feel.

PERFECTION *Synthetic Finishes Available in Grades to Suit Your Budget and Drying Time.*

PERFECTION PAINT & COLOR COMPANY

715 E. Maryland St., Indianapolis 2, Indiana

Primers for Metal

I would like to know the difference between oil-base primer and primer surfacer (also, synthetic primer and primer surfacer) that are used in refinishing automobiles and trucks. I do know that lacquer can be sprayed over oil-base primer or primer surfacer but not over syntehtic primer or primer surfacer.

Also, what is the ingredient of the various materials. Further, I would like to know what is used for filling material in lacquer primer surfacer and lacquer putty.—*N.F.*

The difference between an oil-base primer and a synthetic-base primer is just what the names imply. The first is composed of natural oils and resins, whereas the second is made of synthetic or man-made (manufactured) materials. In some cases the so-called synthetic materials offer an improvement over certain materials that Nature has given us, chiefly because of their uniformity in quality and other characteristics. Space is lacking here to go into great detail on this subject, as this would involve problems of chemical formulation.

Often primer and a primer surfacer may be interchangeable. As a rule a primer surfacer is used where the top coat is applied directly over the prime coat, that is on a 2-coat job. For a really smooth high quality finish the metal surface is usually knife glazed with a fast-air-dry material, then primed, baked, wet sanded, flushed clean, dried thoroughly, then given a surfacer or sealer coat, baked, wet sanded, flushed clean, dried, and then the top coats are applied.

It is entirely possible to apply lacquer over a synthetic base primer or primer surfacer with excellent results if you buy all of the materials from the same supplier and advise him how you plan to use them. If you will consult a reputable manufacturer of these finishing materials, for a complete finishing system, that firm can probably supply you with knife glaze material, primer or primer surfacer and top coat lacquer or enamel, all of which will be compatible and give you the results you desire.—*P.C.B.*

Finishing Gunstocks

We are manufacturers of gunstocks from black walnut, cherry, maple, and other suitable woods. We will appreciate any information you can give us in regard to finishing gunstocks — mainly proper filling methods, lacquering, spot staining, and oil finishing.—*H. Gun Stocks.*

The finish used on gun stocks must develop the utmost in water resistance and in resistance to mechanical wear. The traditional finish consisted of several coats of boiled linseed oil, each thoroughly rubbed down with steelwool before application of the next. Drying time, several days between coats.

Since this method is time consuming, some of the modern industrial finishes will do a better job in less time. The wood may be stained with a suitable water or non-grain-raising

Underwood & Underwood Photo

Does your product demand a

WHITE FINISH?

United's White Bake Enamel combines, in one finish, all the essential requirements you may need. It offers high light reflectivity, chip resistance, durable color retention, and resistance to food acids, detergents and other household chemicals—plus maximum hide-ability. If your product demands a white with these qualities, you ought to investigate United's White Bake Enamel.

Another white worth investigating is United's White Undercoat. With perfect adhesion to most metals, and outstanding filling qualities, it is ideal for use on castings. It air-dries or bakes.

You can get samples of both of these quality whites by writing. Why not ask for them today?

Complete Research Facilities AT YOUR SERVICE

If you are faced with a special finishing problem, the United laboratory will gladly assist in finding a solution. These research facilities are always at your service to help make a better product.

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stain. The toughest finish will be obtained by applying several coats of a very tough lacquer. Application should be by spraying. The first coat or two should be thoroughly rubbed down with steelwool. A drying time of two hours between coats is adequate. The final coat should be steelwooled and waxed.

A similar system, using about three coats of floor varnish may be used, but the drying time between coats must be at least 24 hours.

To secure the utmost in toughness and scratch-resistance, it is essential that the coating materials penetrate as deeply into the wood as possible. This is the reason no sealing material, such as lacquer sealer or shellac is suggested.

If the facilities are available, the best results will be obtained by applying the first coat, thinned down somewhat, in a vacuum tank (pulling a vacuum and then following with pressure). Subsequent coats may be applied in the conventional manner.

Open-grain woods, such as walnut, may be given a smoother finish if the wood is filled with walnut paste wood filler before application of the film forming materials.—*R. H. Wampler.*

Our Platinum Walnut Discolors

We have experienced some discoloration on our platinum walnut finishes. Can you give us an explanation for the following?

After sanding the walnut veneers, we apply a white wood filler. After drying overnight, a coat of clear sealer and two coats of clear lacquer are applied. We allow 36 hours drying time, after which the pieces are rubbed and compounded.

The discoloration seems to go toward yellowish and brownish shades.

Can you suggest a way to overcome this, and is there anything we can do after the discoloration has occurred?—*B. G. Co.*

Resins used in the sealer and/or lacquer top coats are apparently to blame. Even the slightest resin discoloration would show a positive discoloration on this type finish. I know. I have had this problem before. My recommendation would be to use a positive water white sealer and lacquer top coat.

It does not appear to me that the filler is causing the trouble. If filler were causing the trouble the surface would show a more or less blotchy appearance, which is not mentioned. —*Fred Boynton.*

I talked with an experienced finishing foreman on this and he is of the opinion that the trouble lies in the sealer and top coat lacquer. This concern is not getting water white sealer and top coat lacquer. They may be buying a clear lacquer, but still not getting a water white lacquer.

He suggested that I write them and tell them to buy the best grade of water white sealer and lacquer obtainable, then try it out, and if the brown or yellow discoloration still occurs, to send him a sample of an unfinished panel, one that is finished and shows the discoloration, and one in which the discoloration does not show. He will run the panels through the weatherometer in his company's laboratory and try to find out what is causing the trouble.—*P. C. Bardin.*

There are so many things that could be wrong here that the guessing field is wide open. You do not mention a water white lacquer; your lacquer is only described as "clear." I suggest that a wash coat of water white sealer be applied before filling (be sure to use a color-fast filler)

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Up to 50% savings in labor costs are not uncommonly reported by furniture factories that have installed KOCH-DeBURGH "tailored to measure" Conveyorized Finishing Systems. (Patented)

● Whether your finishing department is large or small, a KOCH-DeBURGH Conveyorized Finishing System, *engineered to your requirements,* will give you increased production at lower cost. Write, wire or phone for details!

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EVANSVILLE, INDIANA

and use a good water white lacquer for the top coats. (Naturally use a water white sealer after filling too!)

The reason for the wash coat is that sometimes walnut will cause a white filler to turn slightly brown due to the oily nature of the wood; the wash coat would tend to seal this away from the filler.—*H. Hardesty.*

It is possible that the sealer is pulling out some of the darker components of the white filler. I suggest you talk this over with your filler supplier.

Once the discoloration has occurred there is no way to correct it except to completely remove the old finish.—*R. H. W.*

Sheet metal legs entering a 3-stage washer in which they are cleaned, phosphatized and rinsed in preparation for the application of a durable baked enamel finish. Photograph, courtesy of Klem Chemicals, Inc.

Binks New Seattle Office Serves Pacific N. W.

The Binks Mfg. Co. (makers of spray guns, spray finishing equipment, cooling towers and spray nozzles) announces that its Seattle, Wash., branch has been moved into an independent office in a downtown location. The move is intended to provide better service for jobbers and customers in the Pacific Northwest.

The address of Binks' new office and storeroom is 2120 Fourth Ave., Seattle. (Telephone, Eliot 5131). These larger quarters will enable Binks to carry a more complete stock of parts and equipment right in the Seattle region. Furthermore, the new location has ample facilities for repairing Binks spray painting equipment.

Office at 2120 Fourth Ave., Seattle, Wash.

James C. Level is Sales Engineer and Manager of the new office. Mr. Level is an experienced spray finishing engineer who will advise users on the proper lay-out of a finishing department and on the selection of spray painting equipment to meet any specific need. Without cost or obligation, he offers engineering help on all finishing problems.

Kay & Ess GIVES YOU THE ANSWERS...

...To Your Spray Finishing Problems

Yours for the asking! No matter what your product, this informative, up-to-the-minute, detailed manual will be of real help to your finishing engineers, department superintendents and shop foremen. In it you'll find many ideas to help you save time, cut costs and get better product quality But act quickly! We have only a limited number of these valuable books and want you to get yours.

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ENGINEERING MANUAL
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Authored by the well known industrial writer Arthur P. Schulze, this illustrated book covers the field of 'Modern Masking Materials And Methods For Fabrication And Spray Finishing.'

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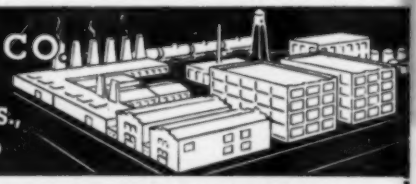

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MAIL THIS COUPON

Please send me the engineering manual "MODERN MASKING MATERIALS AND METHODS FOR FABRICATION AND SPRAY FINISHING."

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Address_____

City_____ Zone____ State_____

Ransburg Unveils Its No. 2 Electrostatic Process

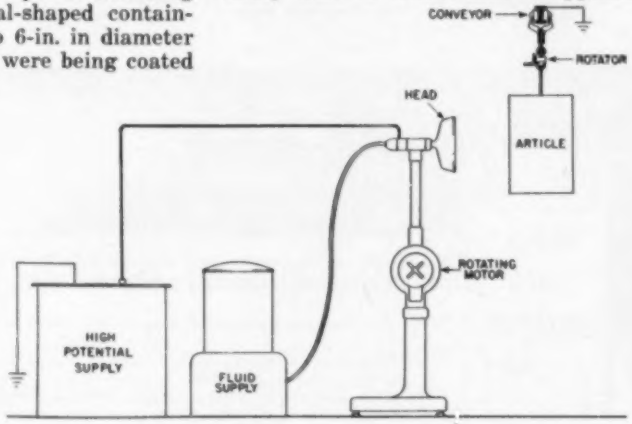
Thursday, July 26, at its plant in Indianapolis, Ransburg Electro-Coating Corp., officially unveiled its No. 2 Electrostatic Coating Process to a group of about 24 editors of industrial publications.

After a brief introductory talk by Dr. Emery P. Miller, those in attendance were divided into small groups and taken through the plant where they were shown four different full-size conveyorized production setups in actual operation. One setup is on a regular production line in the Housewares Division of Harper J. Ransburg Co. Here cylindrical-shaped containers (canisters), 5 to 6-in. in diameter and 7 to 8-in. deep, were being coated on the outside as they moved along in upside down position, resting on workholders atop perpendicular rods which extend up from a near-floor chain conveyor. The products and holders rotated as they moved past new type spray heads.

Next in order came two different overhead chain conveyor setups, each suitable for coating a variety of items. Flat metal sheets hanging like a curtain were coated on one; on the other disc-shaped lids for washing machines were coated; then followed painting of complete washing machines which were rotated as they moved past three spray heads.

The fourth setup included a low flat-bed or apron-type conveyor on which formed flat panels for metal cabinets travel under spray heads positioned to direct the atomized paint straight down.

The Ransburg No. 2 Electrostatic Spray Process embodies an entirely new method of atomizing liquid coatings—Electrostatic Atomization. No compressed air is used. The mist spray of paint, so finely atomized that you can hardly see it, comes off the inside rim of one or more whirling cups or bowls, each chrome plated, highly polished and rotating so perfectly true on center that it appears



Simplified diagram of typical setup for the Ransburg No. 2 Electrostatic spray painting process.

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- Synthetic Enamels

America's leading manufacturers rely on New Period Production Finishes for a superior job at low cost. These quality finishes are easier to apply . . . look better . . . last longer.

Try a 5 Gallon Working Sample at Drum Price

NEW PERIOD Production Finishes

Manufacturers of Fine Wood and Metal Production Finishes

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AMERICA'S FINEST PADDING LACQUER

Creates new life in wood

- It is the Modern French polish
- Produces a beautiful, rich finish
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- Meets present day production demands
- No other finish compares with QUALASOLE

Order a Trial Gallon Can Today!

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COMBINATION STAIN - FILLER

New—Different—Unusual

This new combination stain-filler cuts finishing time 33 1/3%. Wipes easy—can't turn gray—won't fade, won't shrink. Investigate today!

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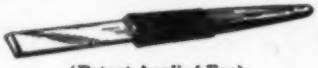
REQUIRES
Good Knives



(Patent Applied For)

FASTER BURNING-IN, BETTER RESULTS WITH

the *Wilkinson Knife*

Made of just the right steel, ground and honed for proper concentration of heat. Easy handling—perfectly balanced like an artist's brush. Write for descriptive circular and prices.

Wilkinson Equip. & Supply Corp.
6958 S. Wentworth, Chicago 21, Illinois

to be stationary. Some of these spray heads are shaped almost like an oversize tea cup, minus its handle; others, larger in diameter, are shaped like a shallow bowl. Centered in the bottom of the cup is a hole to which is attached a hollow shaft, and through this hollow shaft flows the paint, pumped at a predetermined rate, from any conventional paint container.

The spray heads can be mounted in any position; in all cases, of course, the wide open mouth of the cup faces the surface to be coated, and usually it is placed 8 to 12 inches from that surface. Finely atomized paint—electrically atomized—flies off the inside rim of the whirling cup or bowl and alights on the surface being coated.

A source of electrostatic high potential, having one terminal grounded and its other terminal connected to the spray head, creates a strong electrostatic field between the spray head and the articles being coated; the article to be coated is grounded by the conveyor. The force of this electrostatically charged field transforms li-

One view showing the electrostatic spraying (No. 2 Process) of metal chairs which rotate in front of spray heads as they travel along by overhead chain conveyor.

BARRETT'S

DEPENDABLE INDUSTRIAL FINISHES

Established 1870

- Furniture finishes
- Clear lacquers
- Lacquer enamels
- Synthetic enamels
- Varnishes
- Specialties

Barrett Varnish Company

1532 SOUTH 50TH COURT

CICERO 50, ILLINOIS

quid paint into a spray of tiny charged particles and creates an irresistible attraction that pulls those specks of paint to the electrically grounded article. This accounts for complete electrostatic deposition of paint material and the rapid formation of a smooth coating of uniform thickness with minimum overspray. The only overspray in evidence is a small quantity that alights on work holders which support items being painted. All of the paint leaving the spray head is deposited; there is no overspray to be exhausted.

A mild movement of air is provided to give a change of air for reasonable ventilation—to prevent any concentration of solvent vapors in the painting area.

By combining electrostatic atomization and electrostatic deposition, Ransburg's No. 2 Process makes possible a highly efficient setup for conveyorized, automatic, mass-production spray painting.

After the industrial editors had toured the Ransburg plant, they were taken to the Indianapolis Athletic Club, served refreshments and shown moving pictures of several typical installations of this No. 2 Process as it is now operating, coating many different products in plants throughout the country. Following the movie, a discussion period followed at which time all kinds of questions were asked and answered. Every guest was handed a new and colorful brochure which explains and illustrates the process and equipment involved. Following a recess, dinner was served to complete an afternoon of interesting and informative activity.

A one-coat heat-resistant lacquer, C-5173 (up to 300° F.) is announced by the United Lacquer Mfg. Corp.

Rossaul Copper-Brite

According to Rossaul Co., 170 Fifth Ave., New York 10, N.Y., Copper-Brite is a safe bright dip for brass, copper, bronze, nickle silver, phosphor bronze and most copper alloys. It is now in accord with specifications for bright dips on non-ferrous metals that require:

1) After clear water rinse, shall leave no residue that will interfere with conductivity.

2) Leaves non-ferrous metals in a passivated state, resistant to further oxidation.

It is completely safe to handle; is non-toxic, non-fuming, requires no special ventilation, does not etch, will not discolor silver solder.

Automatic Masked Spraying

A new automatic spray painting machine, with flexibility that permits painting a variety of small parts on a mass production basis, has been developed by Conforming Matrix Corp., 331 Toledo Factories Bldg., Toledo 2, Ohio. Parts can be wet painted, one color right after another. The machine is operated entirely by air and is hydraulically controlled.

Spraying is from underneath against the masks, therefore they do not have to be cleaned so often. Surplus spray falls away, is sucked off and exhausted out of the back of the machine. Electro-formed metal masks, which are readily interchangeable in these machines, fit flush with the table; parts are loaded manually by the operator, who holds them face down against the mask. The spraying is automatic but the length of spray time and speed of the loading cycle are controlled by dials on the control panel. A hand dial regulates the amount of paint sprayed. This flexibility is important where a variety of work and varying coverage is needed.

The rapidity of painting is readily adjustable to suit the nature of the part being painted and to match the speed and skill of the operator. Since the operator loads with both hands, normal production is doubled and rates up to 3600 pieces per hour are entirely possible.

If the part to be painted requires a mask with bridging to hold loose centers, the mask is revolved 180° plus during the painting operation to circumvent the shading which would otherwise occur with guns in a fixed position.

Where long parts are to be painted, such as automotive dashboard grilles or plastic television panels, the machine is available with guns which, during spraying, travel the length of the work.

A conveyor belt, which can be ar-

Automatic spraying occurs underneath — in the cabinet — while the part to be painted is held against a masked opening on top of table. Many different sizes, shapes and designs can be painted in one or more colors.

ranged to travel across the rear of the table, brings work to the operator and carries it away.

The machine employs latest type guns and has air agitated paint pressure tanks. All working parts are automatically oiled. All controls are grouped on a control panel.

Clean, sharply defined letters and decorative effects are obtained on intricately designed parts. Accurate control of painted areas, with no fogged edges, is possible on most applications so that afterwiping or buffing off of overspray is avoided.

Featherweight Spray Gun

A new type featherweight spray gun is being introduced by the DeVilbiss Co., Toledo, Ohio. Identified as a Type TGA, this spray gun is designed for a wide range of spray work requiring top finishing quality from touch-up of small spots to the refinishing of large objects. A fingertip adjustment control quickly provides a wide selection of spray patterns for various types of jobs and paint materials.

DeVilbiss engineers specified an

It weighs only 13¾ ounces.

LACQUERS

Let us help you with your finishing problems

The Sign of CLINCO Highest Quality

ENAMELS

THE CLINTON COMPANY
1210 ELSTON AVE., CHICAGO 22, ILL.

SALES LAGGING?

Cut those production costs and get that "quality boost" with WILKINSON PROF-IT BUILDERS.

WILKINSON
NEW GLOSS

A MODERN frenching material for fast production schedules. Fast building and self-lubricated, WILKINSON'S produces master-finisher results with fewer time consuming padding operations.

WILKINSON WAX
RUBBING LUBRICANT

Scientific formulations for faster sanding and rubbing operations. Use finer paper, stay free from mineral oil bloom, clean up easily, and buff to a soft mar-resistant patina.

Wilkinson Equip. & Supply Corp.
6958 S. Wentworth, Chicago 21, Illinois

Spe-de-way

WOOD BLEACH

This single operation, controllable, Patented Bleach

- **Requires No Neutralization**
- **Does Not Raise the Grain**
- **Leaves No Deposit**
- **Wood Is Left Neutral**
- **Economical . . . Dependable**

Gallon Unit makes two gallons of bleaching solution. Application by spray or synthetic rubber sponge. Wood is ready for finishing in less than two hours.

Delivered prices quoted on request.

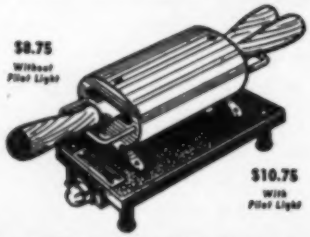
***Spe-de-way* Products Co.**

manufacturers

3639 N. Columbia Blvd., Portland, Ore.

No String Tied To This—

If You Use OP-AL



Patching Knife Heater

STANDARD FOR OVER 25 YEARS

Sold By All Leading Jobbers

THE OP-AL ELECTRIC AND MANUFACTURING COMPANY

809 N. SENATE AVE. - INDIANAPOLIS 7, IND.

Phone: Lincoln 0250

aluminum alloy in the box-frame-designed gun body for ruggedness and dependability. The gun is finely balanced and has a sure-grip handle designed to reduce hand fatigue while spraying. Trigger action is smooth. It has the patented ball and cone principle of nozzle construction. A specially designed air baffle distributes air equally for uniform, thorough and extra fine atomization. For efficient operation, the gun requires about 4 or 5-cu. ft. of air per minute at 40-lbs. pressure.

The TGA spray gun is designed for either suction or pressure feed, the two types of feeds enabling a workman to spray all materials.

Maintenance of the new gun is simple. The brightly polished finish is easily wiped clean and the short paint passage in the gun can readily be flushed out with paint thinner.

Emulsion Cleaner Super-Mul

The DuBois Co., 1120 W. Front St., Cincinnati 3, Ohio, announces its new, ready-to-use emulsion cleaner, Super-Mul. It is a high strength, active solvent emulsion cleaner specifically designed for the removal of industrial soils in spray washing machines. It cleans thoroughly, rinses freely, resists hard water, does not sludge out.

Super-Mul is safe, both on personnel and materials; does not attack metals and painted surfaces and will not deteriorate machinery or equipment; is free of objectionable odor; is non-toxic and has a high flash point.

The manufacturer recommends it for metal cleaning in one-stage washers, for cleaning prior to bonderizing, cleaning during processing and before painting. When used in low concentrations in the rinse, Super-Mul provides interim rust-inhibiting; also useful for precleaning prior to alkaline cleaning and for wipe-down cleaning of equipment and machinery.

Bright, Flexible, Quick-Drying Process Colors by Glidden

Consistency of cold cream and workability of ink are combined in new Screen Process Standard Poster Colors announced by Glidden Co., Dept. K-751, 11001 Madison Ave., Cleveland 2, Ohio.

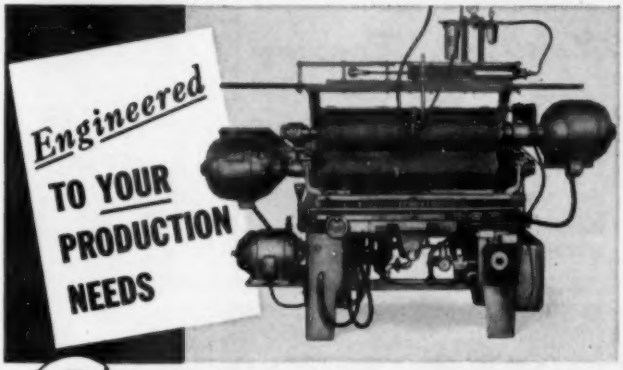
Quick drying, they speed up the printing process and are formulated to allow for repeated overprinting without oozing or dropping of succeeding colors. They air dry in several minutes and force-dry immediately, but will not dry on the screen.

Because of their flexibility, the material on which they are printed can be folded without danger of scaling or cracking. This quality makes them ideal for 24-sheet poster work.

A product of several years of research at the Glidden Co., the colors have been subjected to severe tests. In one test they were screened on tissue paper and the paper rolled in a ball with the color remaining intact.

"The colors [14] are the brightest that can be produced," according to Bert Zahn, manager of the graphic arts and sign finishes department of the company, under whose direction the colors were developed.

Finely ground in specially treated oils and synthetic resins, the new Glidden poster colors pass freely through a finely meshed screen. Each color is miscible with any of the others. Also usable as background for fluorescent poster colors. The new colors are applicable to all screen work and all types of paper.



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For Surface Finishing:
screw drivers, chisels, pliers, saws, wrenches, compacts, cigarette cases, fine silver, surgical instruments, fan blades, flat iron sole plates, many other similar items

Working closely with your engineers we will develop a custom machine designed for maximum surface finishing efficiency on your particular application. Totally enclosed, abrasion-proof hydraulic circuits assure uninterrupted production and vastly reduced maintenance costs.

CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

Finishing Equipment-Systems

PLANNED, BUILT, INSTALLED

Dip • Flow • Spray

✔ AUTOMATIC

✔ MANUAL

✔ CONVEYORIZED

May we suggest to you low cost top quality production methods?

Morrill and Renshaw Inc.

Finishing-Coating-Spraying Engineers

624 N. GREEN ST.

CHICAGO 22, ILL.

Manufacturers of Baking Ovens, Washing Machines, Spray Booths

NICKEL

SPRAY MASKS

Durable nickel formed masks last 2 to 3 times longer and give 100% to 300% more parts finished than conventional copper masks before reservicing. No other mask equals their performance and long life.

For complete details write for our free brochure No. IF-10 or send samples or prints for quotations.

Thierica Studio

409 Henry Ave., S. E.
Grand Rapids 6, Mich.

"Reliable Viscolator" A Paint Heater

The "Viscolator" is designed to make possible the spraying of high solid content lacquer, synthetic and other similar material at elevated temperatures. The method used is one of proper predetermined thermostatically controlled temperatures. Less thinner is required, and a faster more uniform finish equal to two or more coats of cold material is obtained. With the "Reliable Viscolator" 60% more solid content may be sprayed with hot synthetic than with cold, and 45% more or over of solid contents with hot lacquer.

The "Viscolator" heats the material to reduce its viscosity by electricity, steam or in combination, and is manufactured in capacities from 8 gallons to 250 gallons per hour output, in the non-recirculating and recirculating types. (The recirculating type is recommended for use with hot lacquer.) All units up to 40 gallons per hour output are electrically heated. Heating elements and the material carrying tubes are embedded in solid metal, producing fast heat transfer. With the recirculating type, the heated material is circulated to the spray gun by a system motivated by air or electric driven pump, this draws directly from the material container so that a pressure tank is not needed. Heated air is provided if desired but it is not recommended for hot lacquer spray.

NON-INJURIOUS **ELECTRO** NON-INFLAMMABLE

COLD STRIPPER

FASTEST *in Action* **LOWEST** *in Price*

WRITE FOR TESTING SAMPLE OR ORDER
5-GALLONS AT DRUM PRICE

Specify whether dip or brush type is desired

Allied Finishing Specialties Co.

2641 W. Grand Ave. • Chicago 12, Illinois

In 15 to 20 minutes the heated material is ready to be sprayed at temperatures of 160° to 180° F. (Higher heat may be had if desired.) Result: Solvent waste is lower; coverage per gallon is increased; fewer coats are needed; the finish has better flow-out; less tendency to sag; blushing and orange peel are eliminated . . .

The "Reliable Viscolator" was developed and is manufactured by the Reliable Products Mfg. Co., Inc., 123 DeKalb Ave., Brooklyn 1, N.Y.

Heat-Resistant Aluminum Paint

The Skybryte Co., 3125 Perkins Ave., Cleveland 14, Ohio, announces two heat-resistant Skyco aluminum paints; one for interior service resists heat up to 1000° F., and one for exterior service resists heat up to 550° F. The one for interior service is for such products as boiler and furnace fronts, radiators, ovens, hot-water heaters, etc. One coat covers and provides an attractive appearance that endures.

Quick-Acting Solvent Cleaner

Du-Lite Chemical Corp., Middletown, Conn., announces the development of "Dynakleen," a powerful new soak solvent. Designed specifically for quick removal of buffing and drawing compounds from knurled or fluted surfaces of all metals, "Dynakleen" will remove all types of soils including grease, oils, discolorations, etc., in less than a minute. It requires no heating or special tanks, and can be used in spray washing machines or can be applied by hand. It is a safety solvent that dries quickly and can be used over and over with only occasional filtration . . . . a good conditioner for preparing metal surfaces for painting.

This new edition is an excellent text and reference book of 758 pages, containing a tremendous amount of authentic and complete information on industrial solvents and their uses—for example, in cleaning and finishing materials and wherever solvents are used in industry. The revised contents are organized and classified in easy-to-read, easy-to-find form for practical busy men.

Its practical contents are divided into 16 chapters, some of which include such headings and sub-headings as solvents, non-solvents, evaporation rate, boiling point, flash point, toxicity, viscosity, safe handling, hydro-carbon solvents, alcohols, ketones, acids, ethers, esters, etc. It contains many new charts, illustrations and conveniently tabulated material, all developed to help the reader grasp the factual information quickly. The alphabetical subject index covers 11½ pages.

This book will prove valuable to key men in the industrial field, who have responsibilities in connection with the clenning, surface conditioning or preparation of products for painting, plating or polishing, and those concerned with the selection, purchase, storage, handling, testing or use of finishing materials and thinners for same.

Price $12.00—Money Back Guarantee.

INDUSTRIAL FINISHING

1142 N. Meridian St. Indianapolis 4, Ind.

New Substitute Finishes

Manufacturers who need a substitute finish for black nickel or brass will be interested in the new zinc dips developed by United Chromium, 100 E. 42nd St., New York 17, N.Y.

A simple dipping operation produces, on zinc plated parts, a black or brass colored finish which is exceptionally dense in color, high in gloss, and has excellent corrosion resistance. Another new dip produces, on zinc plated parts, a finish which is a true olive drab color. These dips can be used to meet government specifications for chromate-type conversion coatings on zinc.

Crystal-Clear Plastic Adhesive

The crystal-clear bonding of snow-white Styrofoam is the newest industrial use now being made of Rez-N-Glue, a vinyl-based cement manufactured by Schwartz Chemical Co., Inc., 326 W. 70th St., New York City. The versatile transparent adhesive heretofore has been used in volume to cement dissimilar plastics, and plastics to non-plastics.

In the cementing of Styrofoam sections, Rez-N-Glue is said to answer the need for an efficient adhesive that is water-white and completely non-staining. Because it is transparent, even an excessive application of the cement will not mar the foamed plastic object.

Pittsburgh Coke & Chemical's Fine Chemicals Division

The Pittsburgh Coke & Chemical Co., Oliver Bldg., Pittsburgh, Pa., producer of pipeline enamels and protective coatings, announces formation of a new Fine Chemicals Division with an anticipated manufacturing program that includes a selected range of dyestuffs, pigments and intermediate products, pharmaceutical intermediates, textile auxiliaries and other chemicals.

New Phosphate Treatment for Pre-Treating Bare Metals

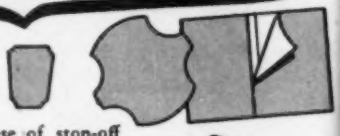
A new phosphate compound for treating metallic parts, produced by Octagon Process, Inc., 15 Bank St., Staten Island 1, N. Y., is called Anchorite 100. This material gives uniform results and meets the specification for a Class C (Type II) finish in U. S. Army Spec. No. 57-0-2C. It also meets the armed forces specification JAN-C-490, Grade 1, and is used on military equipment on which paint failure cannot be risked.

The phosphatizing action of Anchorite 100 changes the surface of steel, iron, zinc and cadmium parts into an inert phosphate compound which is highly resistant to corrosion, and which provides an excellent base for organic coatings.

One of the chief causes of paint destruction on ferrous parts is that steel does not have a chemically uniform surface, therefore galvanic corrosion occurs between different elements that make up the steel. This breakdown produces an alkaline medium which attacks the paint film from underneath. Since the Anchorite 100 surface is non-conductive, electrochemical breakdown cannot occur; the phosphate compound acts as an insulating barrier between the metal and paint.

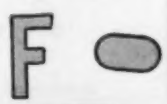
The phosphate treatment can be applied either by immersion or spray. It is easily adapted to both small and large production needs. [*To page 106*]

NEW
MASKING METHOD
for SPRAY PAINTING • PLATING
• SAND BLASTING
PRE-CUT SELF-STICKING QUIK-MASKS



Hundreds of plants now using Brady QUIK-MASKS are saving time and money by completely eliminating costly hand work, use of stop-off materials and metal shields. QUIK-MASKS are pre-cut to the exact size and shape you need. Protect name plates, machined parts, plated and polished sections, holes, threads, etc., from paint, plating and cleaning solutions, oils, acids and sand blasting.

QUIK-MASKS are pre-cut from special "SCOTCH" brand plating and masking tapes. They stick without moistening—are quickly applied and removed. Circles, squares, rectangles, hexagons, letters and numerals stocked in many sizes. Nameplates and other specials made to your exact requirements.



FREE SAMPLES

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
E. SPRING STREET • CHIPPEWA FALLS, WIS.

S-Y Lacquers

Supplying the finishing industry with lacquer of just the right type necessary for a durable and beautiful finish, with outstanding sales appeal, is not a new experience with us.

We've been helping manufacturers for a number of years, rendering prompt and efficient service. May we help you, too. Try us!

Phone—Write—Wire!

STILLE - YOUNG

Manufacturers

CHICAGO 14

"Wood Graining" ADDS Eye Appeal

American Graining Plates are photographic reproductions of fine woods.

AMERICAN RICHWOOD PRODUCTS CO.

Graining Plate Division

104 E. Mason St., Milwaukee 2, Wis.

Technical service engineers of Octagon Process, Inc., can advise users as to exact details of the immersion process. This process utilizes a series of five tanks constructed of mild steel. Zinc and cadmium require only 30 seconds to one minute in this process, while some steel alloys occasionally require as much as five minutes. The Anchorite solution is made by adding a small quantity to a large volume of water.

Hydro-Air Pressure Washer

An improved air and water pressure washer, known as the Hydro-Air Pressure Washer, is announced by D. & M. Products, Inc., 30 N. Raymond Ave., Pasadena 1, Calif. The Hydro-Air Pressure Washer connects directly to ordinary air and hot or cold water supply outlets and is capable of delivering either a powerful force of "cold steam" or a fine spray that penetrates the smallest cavities. Compressed air separates the water into minute particles, thus breaking the surface tension of the water and producing a fine penetrating spray.

Westinghouse Sets Up Information Services

A department of Information Services has been formed by Westinghouse Electric Corp., Pittsburgh, Pa. All functions of public relations, employe relations and related activities will be included in the new section.

Heading the new department as director of services is Dale McFeatters who has served as director of employe information since joining Westinghouse in 1945.

Charles N. Fry is named manager of public relations and Charles A. Ruch is appointed manager of employe information.

Appointed manager of techincal information in the new organization is Charles A. Scarlott who also will continue to edit the Westinghouse Engineer, the company's engineering magazine.

Mac's FASHION SEALERS & LACQUERS

A specially formulated sealer for the first coat under clear gloss or flat lacquers provides a good body and sands easily. Also works well under varnish and enamel. A production test will prove its superiority.

MAC'S FASHION LACQUERS are available in clear and opaque for application to all kinds of surfaces. Spray easily and give good coverage in any desired sheen. Outstanding for clearness and attractiveness. **Do not get cloudy.** Write for a production test sample and descriptive folder.

The Lawrence-McFadden Co.

Headquarters for Fine Finishes Since 1875

7430 STATE ROAD "Our 76th Year" PHILADELPHIA 36, PA.

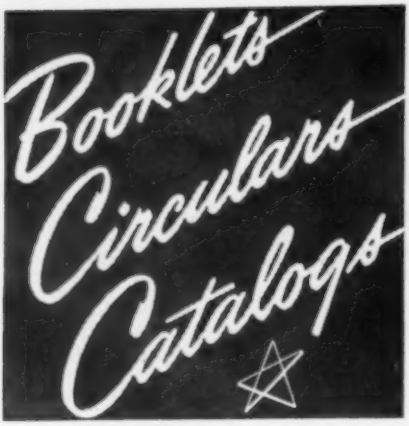
Coated Products Must Be Kept Clean

WITH ALL of the care and cleanliness in and around factory finishing rooms, instances still occur where foreign particles and oil from the conveyor chain drop on freshly coated products in process. The particles may be dust or dried finishing materials deposited on the chain and hooks, and shaken loose by vibration.

Regardless of what kind of product is being finished or what type and color of coating material is being applied, no firm can allow such a condition to continue very long because of the prohibitive cost of rejects.

This problem can be solved in any one of several different ways. One suggestion is to install a make-up air system wherein more filtered air is forced into the finishing room than is taken out, thereby producing what is commonly known as a "pressurized room." Then install a conveyor cleaning device in which both chain and hooks are mechanically cleaned on each complete circuit. An automatic oiler, used in conjunction with this set-up can be adjusted to deposit just enough oil on the bearing points of the chain, so there is no excess oil to drip on the work.

Another method is to install metal or wood baffle plates under the conveyor chain—that is, between the chain and the product. These baffle plates may be as wide as 10 or 12-in.; they should be painted, preferably white, so that oil and dust particles can be seen, and they should be cleaned at regular intervals. If baffles are to be installed on a conveyor now in operation, the hooks used to support the products will have to be replaced with hooks that bend around to clear one edge of the baffles.—*B. C.*



Portable Disc Sanders

Two models of portable disc sanders for use in auto repair and body shops, metal fabricating plants and foundries, wood-working factories, shops, shipyards and building operations, are announced by Cummins Portable Tools, in its newly developed "Power Tools for Industry" line.

Full details are contained in a new condensed catalog of "Power Tools for Industry," obtainable on request to Cummins Portable Tools, Division of Cummins-Chicago Corporation, 4740 N. Ravenswood Ave., Chicago 40, Ill.

Patching Wood Finishes

Materials, supplies and information for repairing or patching finished wood surfaces are listed in a new 16-page (5½x8½-in.) booklet published by Star Chemical Co., Inc., 4500 W. Cermak Road, Chicago 23, Ill.

Listed supplies include French patching material, burn-in knives and sticks, repair putty, brushes, stains, colors and touch-up lacquer. When requesting a copy of this valuable free booklet, which includes five pages of detailed instruction about patching, please give your company name and your own title or connection.

Metal-Cleaning Guide Free

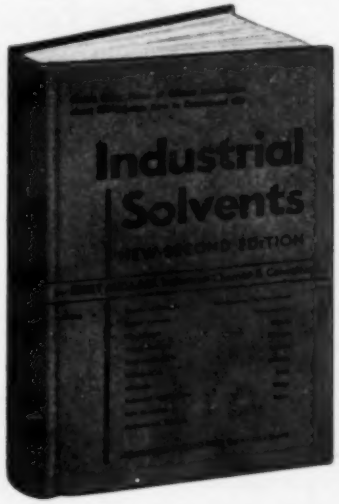
Oakite Products, Inc., 132F. Thames St., New York 6, N.Y., manufacturer of industrial cleaning and related materials, announces the publication of a new edition of the 44-page illustrated booklet, "Some Good Things to Know About Metal Cleaning," reviewing metal cleaning in all its many phases.

The booklet discusses the wide variety of soils resulting from such metal fabricating processes as heat-treating, forging, rolling, stamping, drawing, extruding, spinning, grinding, machining, buffing, etc., then describes specific materials, equipment and procedures for the removal of these soils.

Among the many metal-cleaning and related operations reviewed in detail by the booklet are the following: tank cleaning methods; machine cleaning methods; electrocleaning steel, electrocleaning nonferrous metals; pickling, de-oxidizing, bright dipping; pre-paint treatment in machines; pre-paint treatment in tanks; paint stripping; steam-detergent cleaning; barrel cleaning; burnishing; cleaning in hard-water areas; treating water in paint spray booths; rust-prevention procedures.

Industrial Solvents Book

The second edition of an excellent text and reference book called, "Industrial Solvents", by Ibert Mellan, Industrial Chemist and Consultant, is now completed and ready for distribution. The first edition of this book came out in 1939. It proved to be so much in demand that it was reprinted in 1943 and again in 1945.



This new edition contains a tremendous amount of authentic and complete information on industrial solvents and their uses—for example, in cleaning and finishing materials and wherever solvents are used in industry. The revised contents are organized and classified in easy-to-read, easy-to-find form for practical busy men.

The book has 758 pages, 6x9-in., clearly printed in easy-to-read type. Its practical contents are divided into 16 chapters, some of which include such headings and sub-headings as solvents, non-solvents, evaporation rate, boiling point, flash point,

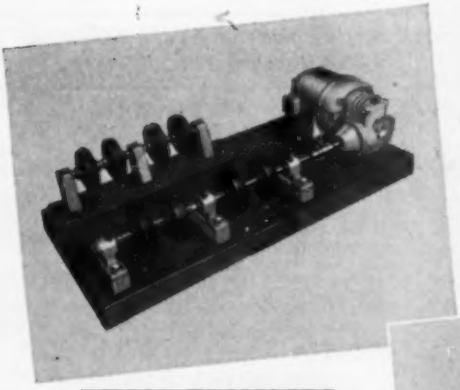
(Continued on page 110)

You Can't Beat a Drum!

FOR FAST, ECONOMICAL MIXING

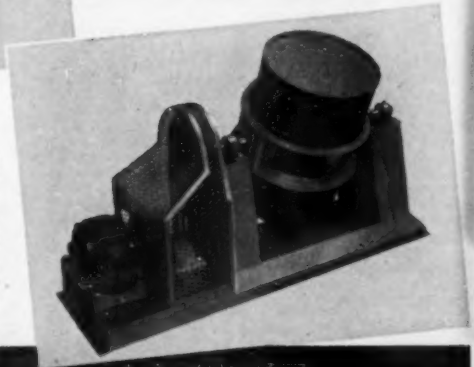
And, you can't beat "U. S." Drum Mixing Equipment for long, dependable, low maintenance service!

Save hours and dollars by mixing in your own or supplier's drums. Reduce handling costs. Eliminate costly "clean-up." Avoid contamination. Minimize solvent hazards. Use rugged "U. S." Drum Rollers and Drum Tumblers for continuous, trouble-free operations.



DRUM ROLLERS

Adjustable to handle any round container from one-gallon can to 70-gallon drum. Eight sturdy rubber wheels are positionable to provide ample clearance for rolling hoops and bung openings. Heavy-duty motor rolls loads up to 500 lbs. Standard sizes have one, two, three, or four drum capacities. Constant or variable speed up to 190 RPM available.



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Process Equipment Div.

168-C

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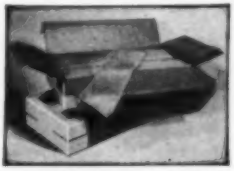
Cut off any size piece and use as needed.



Already cut and folded, ready to use.

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will **stay** SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. **All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free.** It's clean and sanitary—there's no waste.

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toxicity, viscosity, safe handling, hydrocarbon solvents, alcohols, ketones, acids, ethers, esters, etc. The alphabetical index of subjects covered in the contents extends over 11½ pages. The book is handsomely and durably bound and measures 1½-in. in thickness.

Men who have responsibilities in connection with the cleaning, surface conditioning or preparation of products for painting, plating or polishing, and those concerned with the selection, purchase, storage, handling, testing or use of finishing materials and thinners for same, will find this book of great value. They will read it and refer to it often. It must be seen and examined to be appreciated. It contains many new charts, illustrations and conveniently tabulated material, all developed to help the reader grasp the factual information quickly.

This book is of excellent value to key men in the industrial field. It can be obtained from Industrial Finishing magazine. Price, $12.00.

Chain Drives and Conveyors

A new bulletin entitled "Installation, Operation and Maintenance of Chain Drives and Conveyors" has just been published by Chain Belt Co. of Milwaukee. Of great interest to all who design, install, maintain or operate chain drives and conveyors, this bulletin shows how to get the most service from your sprocket chains. The text is short and to the point, and most of the illustrations show graphically the correct and incorrect ways of solving chain installation, operation and maintenance problems.

For your copy, request Bulletin No. 51-7 from the Chain Belt Co., 1600 W. Bruce St., Department PR, Milwaukee 4, Wisc.

3-Dimensional Layouts for Planning Plant Production

"Visual" Planning Equipment Co., Inc., of Pennsylvania Ave., Oakmont (Alleg. Co.), Penna., has just announced its "Repro-Templet System". This is a complete method for securing blueprints or Ozalid prints directly from "Visual's" 3-Dimensional Layouts.

A photographic film templet, coated with a pressure-sensitive cement, is now furnished to match each piece in the model layout. Once the layout is complete, the "Visual" Photo-Repro-Templets (patent applied for), affixed to a film grid sheet, become the master from which as many prints as needed may be secured.

Based on the statements of top Kaiser-Frazer engineers, the new "Visual" process saved 26,000 man-days of planning and layout time in the current conversion of the plant at Willow Run.

Painting Galvanized Steel

MANY of the radio-relay towers (for coast-to-coast television by the end of this year) are hot-dipped galvanized (zinc coated) steel structures, and others are made of electrogalvanized steel. When the taller galvanized towers are located near airlanes, they are marked with warning lights and must be striped as soon as possible with the orange and white enamel striping paint designated by the Civil Aeronautics Administration. They cannot be left to weather for a year to develop a roughened surface which would provide anchorage for the paint—and applying chemical pretreatments or etches to a tall steel structure is easier said than done.

Zinc dust-zinc oxide priming paints have been used by telephone engineers for many years on new, bare and untreated galvanized steel in numerous other jobs because of their adherence to such smooth zinc surfaces. The contractors are using these paints as a primer on the many towers which are scheduled for orange and white striping.

The same priming paint has several other applications on radio relay towers. One is a "patch-up" coating to protect structural members that are cut in the field; another routine operation is to touch up all galvanized bolts with zinc dust-zinc oxide paint.

All electrogalvanized towers, when used on far-western portions of the network, where surveys indicate weather conditions will be particularly difficult, also are being given a coat of zinc dust-zinc oxide paint to provide a wide safety margin of extended service.

Whether used in galvanizing or in paint, zinc is an important factor in construction and maintenance of these radio relay stations.—*N.J. Zinc Co.*

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FEEDS PAINT TO MAKE CURVED OR STRAIGHT LINES

Simply fill Tubular Glass Paint Fountain with paint or lacquer and Knurled Wheel Tip feeds paint evenly! Tips interchangeable. Master Paint Striping Tool complete with 1/16" tip, $1.00. Other complete tools with 1/64", 1/32" 3/64", 5/64", 3/32", 1/8" widths, $1.50 ea. Extra tips $.75; complete kit with tool and 7 tips, $5.00. Used by industry on production striping. See your dealer or order direct today.

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CARLSTADT, NEW JERSEY

Industrial FINISHING Editorial

Dust is Dangerous; Makes Explosions

Industry has come a long way in reducing and eliminating dust accumulations. In the finishing field the average person thinks of dust only as a menace to clean, smooth finishes. However it could be the cause of irrepairable damage.

H. R. Brown, U. S. Bureau of Mines safety engineer, told representatives of the National Fire Protection Association that in the 10-year period ending with 1950, 119 persons were killed and property damage amounting to 38 million dollars was caused by dust explosions.

The grain industry is not the only one that produces combustible dusts. Aluminum and magnesium powder, synthetic resins and plastic molding compounds, coal and wood dust, starches, spices, insecticides, certain kinds of fertilizers and chemicals are common examples of materials that produce explosive dusts.

Scientists agree that any combustible dust, if fine enough and dry enough to form a cloud in the air, can produce an explosion anywhere if a sufficiently hot source of ignition is present, and if the dust concentration in the air is confined within certain limits.

Dust collection, dust removal and the elimination of ignition sources are widely used to prevent dust explosions. Mr. Brown said that the Association's Dust Explosion Hazards Committee has prepared 17 codes for preventing dust explosions in different industries, and that the Committee on Explosion Venting has prepared a set of recommendations on the subject. This information is available in National Fire Protection Association publications.

REPRINTS AVAILABLE

Paul Blackmore's 12-page article entitled

"HOW MUCH IS A GALLON OF PAINT WORTH"

as published in the August, 1950, issue of this magazine.

PRICE 10 CENTS PER COPY—

Stamps Accepted.

INDUSTRIAL FINISHING Magazine

1142 N. Meridian, Indianapolis 4, Ind.

Have You Decided Too Quickly—and Unwisely?

In the ever changing hurry of modern business we become fast thinkers, fast drivers and fast producers. These may be commendable traits but not when they are carried too far. There is another side to be considered. Are we resorting to too much speed in making decisions?

Suppose that after due consideration a change is made in the fabrication or finishing of some product. Results are observed. If the project does not indicate immediate and complete success, is the whole plan abandoned as a failure?

Often it takes a little time and patience for a change for the better

BARRETT CENTRIFUGALS

The Barrett Centrifugal Enameler

FILWHIRL ENAMELERS—For Coating, Japanning, Enameling—Articles.

TYPHOON WASHERS — For Washing Metal Parts, Forms, etc.

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WHIZO GALVANIZER—For Throwing Off Excess Molten Metal. Used for Tinning or Galvanizing Small Articles.

DIPSPIN RUSTPROOF — Transparent Protector, Oiling and Slushing.

HYDROSTATIC IMPREGNATORS—For Processing Wire Coils, Paper Tubes, Fabric, etc.

OIL EXTRACTORS—Oil from Chips and Parts —Forms, etc. Liquids from Solids.

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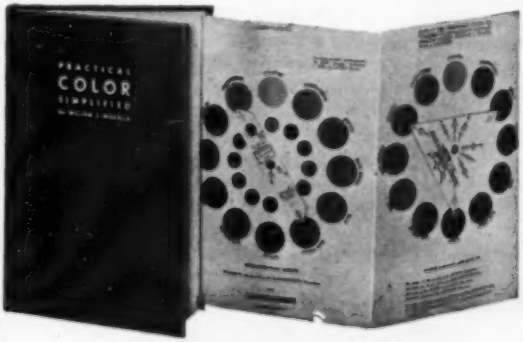

128 Pages. Price $5.00

A Handbook for everyone interested in or using Color. Contains many Tables, Color Plates and the Miskella Patented Color Chart. Just revised and reissued in a Limited Edition after many urgent requests from among 5000 users of previous editions in all parts of the world. Answers those vexing color questions which come up every day—the little technical puzzlers that bother. Contains a wealth of valuable information written in understandable form so all may understand.

The Patented Miskella Color Chart enables you to mechanically select colors, mix shades and tints, harmonize three or more colors and avoid color discords. Securely fastened in back of book. Colors are hand applied with lacquer on cloth not easily damaged by frequent handling. On it are mounted, pivoted celluloid arrow and triangle. This Chart is worth alone the price of the entire book!

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DISTRIBUTOPS WANTED: Good territories open to men calling on finishing field.

to be worked out. Employees may not be as quick to accept certain changes as management had anticipated. Usually an explanation of the change or plan will help along with its success.

We wonder how many perfectly sound production plans have been scrapped after a trial run that was too short to be really decisive. Perhaps some modification of the original plan is in order, but let's not discard the idea as a failure because we're too quick on the decision trigger. Speed in judgment, as well as speed in driving on the highway, can be excessive.

Ounce of Thought . . . Pound of Worry

Every time you think of it you can call to mind examples of how "an ounce of thought is worth a pound of worry" in finishing rooms and paint shops. A few ounces of thought and intelligent action directed toward cleanliness and taking reasonable precautions for preventing a fire, an accident or some form of vandalism—this may save several pounds of worry plus heavy expenditures in money.

As an example, delay in replacing a broken out window pane from a window close to the street permitted and perhaps invited a bit of vandalism—or it may have been just a kid's prank—that resulted in burning down an entire plant some time ago. Two boys were passing the factory after working hours; one lighted a match and tossed it through that broken out window pane. Still lighted, the match fell on inflammable materials or supplies in the finishing room and immediately started a fire which spread rapidly. Many people lost their jobs and the company lost its factory.

Using cleaning solvents inside the

Form-A-Roc · *FIRST COAT*

FOUNDATION FOR FINE FINISH

1. Dries with lacquer speed.
2. Has double lacquer solids at spray gun.
3. Fills very well—sands easily.
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5. Holds out lacquer, synthetic or oleoresinous enamels exceptionally well.
6. Thins 3:1 with xylol.
7. Available in GREY, SALMON and OFF-WHITE.
8. Ground well to smooth texture.

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THE VARNISH PRODUCTS COMPANY

5206 Harvard Avenue **Cleveland, Ohio**

factory, and in homes too, without forethought about accumulated fumes at and near floor level, pilot lights, electric and friction sparks, has resulted in many fires, serious injuries and frequent loss of lives. All could have been avoided if someone had done a little intelligent thinking and taken some prompt action to avoid creating a dangerous booby trap.

About the work in process too; here, if or when something isn't done right, so many things can happen to ruin the final finishing job that one couldn't enumerate all of them if he used every page in this magazine. After all, there is no adequate substitute for clear thinking, continuous alertness and prompt action in an emergency. It can be the means of saving lives, jobs, products, materials, supplies and property, all of which are valuable and, in these days, difficult to replace.

Prepare Plant Now For Winter Months

What little is left of August and the full month of September—this is the logical time to check over all windows, doors, ventilation openings, roofs, concrete drives, retaining walls, in fact make all necessary repairs and painting that need to be done. In checking the outside work, look over the calking around the window and door frames, for it is through these openings that not only air but dust enters the building. Time will be needed to obtain the necessary materials to make these repairs, and additional time will be involved in doing the work. The late fall season often brings on weather that is not conducive to working out of doors—and then there may be less facilities, less time and less inclination to do it because of a rush for greater output.

RONCI SPEEDIP WHIRL ENAMELER

Made in Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

Prompt Deliveries

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

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High Solids Coatings Come to the Fore

★ In recent years the paint industry has seen the rise of coatings containing either 1) no solvent, 2) water, or 3) considerably less solvent than conventional coatings. Hot spray coatings, hydrosols, emulsions, latices, organisols, plastisols, and laminating materials are examples of these types.

In many applications, the solvent is regarded as an evil which adds to the cost of coating the finished product, as it evaporates into the air without adding anything to the film. Consequently, applying the coating with less solvent or none at all reduces the cost on a unit basis. However, it should be noted that in the great majority of cases the cost of the solvent is a secondary factor. These new types of coatings have certain advantages such as higher solids, less flammability, higher build and less penetration into porous substances.

Hot spray lacquer is an example of *a coating that has had its solids content raised and its solvent content lowered.* Hot spray lacquers have become widely accepted by industry during the last five years.

Emulsions and latices of various types have also expanded their use in recent years. In these coatings, water has replaced all or part of the more expensive organic solvent. Such products have problems of their own, of course. Special equipment is needed in their manufacture. Discolora-

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*

tion due to rusting of the container may be a problem. Stability during storage and the danger of the material being ruined by freezing are other problems that have limited the use of these materials.

Organisols and plastisols—products in wide use today—did not exist a few years back. Both need the application of heat to be converted into a useful cohesive film. An organisol is essentially a film former suspended in low cost diluent rather than dissolved in more expensive solvent; plasticizer is also present. Considerably higher solids are possible by this procedure. Plastisols are 100% solids. A plastisol consists of a film former suspended in a solvent type plasticizer. When the film is heated the plasticizer dissolves the film-former producing a tough cohesive film on cooling.

Certain coatings used in lamination work are also 100% solids, part of the coating being a liquid monomer which polymerizes upon the application of heat. [*Continued on page 118*]

". . . might even be atomic bomb parts—all I know is that it's some kind of a top secret government job!"

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(DEFENSE ORDER)

or

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in supplying the following to exact specifications, government or civilian.

- Lustreless, semi-gloss lacquers
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Duralac Chemical Corp.
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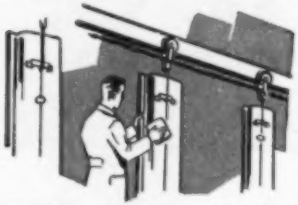
DUST-ALL Tack Rag

for better, cleaner finished jobs



Remove the specks, lint, dust from surfaces to be painted; wipe them off with a Dust-All Tack Rag; be sure of fine, blemish-free, finished jobs.

Get the Dust-All Tack Rag in the familiar Red Checkered Bag; also available in 150-250-500 yard rolls.

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BLUE - BOY
5 GALLON
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Originators of paint rejuvenating equipment---sixteen years—thousands of satisfied users.

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All of these products have enjoyed a vigorous, sometimes phenomenal, increase in their use during the past few years. They undoubtely will show further growth in the future.—*E.V.G.*

Reviving an Oldtimer

OCCASIONALLY ONE of the older workers, with long experience and a record of good workmanship, develops careless habits on the job, cuts corners in order to speed up operations (inefficiently) and is satisfied to have his finished work pass inspection by just a close squeeze. His philosophy becomes "if it will get by, it's plenty good enough".

If you have such an employee (you are almost sure to have one, sooner or later) you may snap him out of his boredom by asking him to assist in setting up a worker training program covering his position. Explain that it is only to prepare for possible plant expansion, or his own promotion or retirement. If you have actual beginners in the finishing department for him to help train, so much the better.

First, ask him to help fix up a detailed list of operations for the job, together with time estimates for each operation or part. Then ask him to collect or look over whatever reading matter can be found that deals with or touches on any phase of his work. Perhaps he will be capable of rewriting some of this printed matter; at least he can indicate what he believes will be most useful to a new worker.

This effort will not be wasted. After all, a training program adapted to your own finishing room has considerable value. And, long before it's finished, you will notice your older worker has re-trained himself in numerous ways that will help bring back his former interest and efficiency on the job.—*G.M.*

DRUM TUMBLER

... for mixing materials in suppliers drums

Will tumble any drum end over end at 30 rpm. Detachable crank on end of motor shaft makes it possible to turn down into any position for testing contents or draining. Portable ramps for fast insertion and removal of containers.

ASSURES:

Uniform mix
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Send for descriptive literature!

THE VOL-U-METER CO., P. O. Box 54, Buffalo 16, N.Y.

Hotel Bar Fixture in Solid Walnut

Finisher tells step by step procedure used to finish a bar fixture of solid black walnut.

RECENTLY, I was called on to finish a solid walnut bar for a large hotel. The bar top was built of 1½-in. selected walnut. Some sap streaks appeared in the top, but this had to be a first class job to match walnut office furniture going with the job.

I made up a water stain to match the sample block. Also, I made a sap stain of alcohol-soluble dyes. The following steps were used in the finishing process:

1) I sanded the bare wood with 4/0 sandpaper, finishing off with No. 6/0 until smooth.

2) Stained with water stain which I had made up with water-soluble dyes.

3) Blended in the sap streaks with the sap stain made with alcohol-soluble dyes, mixing in a small amount of shellac to act as a binder.

4) Wash coated with shellac—a 4-lb. cut reduced in the proportion of one part shellac to five parts alcohol. Drying time allowed, one hour.

5) Sanded with No. 6/0 sandpaper until smooth. Then checked the sap parts to be sure they were uniform. Wherever necessary I touched up with the same sap stain.

6) Filled with walnut filler, cut 14-lbs. of paste filler to one gallon of naphtha. Allowed overnight to dry.

7) Applied a wet coat of lacquer sealer and allowed one hour to dry.

8) Sanded with No. 6/0 sandpaper until perfectly smooth.

9) Sprayed on a lacquer consisting

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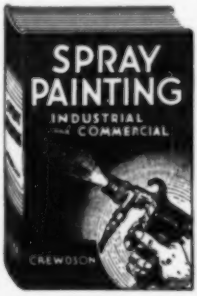

This new book covers the fundamental principles of spraying technique, together with the latest developments and practices of this craft. Covers common paint pigments, paint extenders, enamels, oil and spirit varnishes, shellac, lacquer, synthetics, all types of modern air guns, spraying technique, spraying standard materials, spraying defects, their cause and remedy, flock and suede finishes, striping and lettering, pearl lacquer finish, also automatic spraying, electrostatic spraying, agricultural spraying and automobile spraying. Ends with the sprayers "Ten Commandments."

INDUSTRIAL FINISHING
1142 N. Meridian St. Indianapolis 4, Ind.

of a mixture of 50% gloss and 50% flat lacquer. Two hours drying time.

10) Applied two coats of alcohol-resistant lacquer, allowing one hour drying time between coats. Let dry over night and rub.

When the job was completed it was a clear and uniform job—a perfect match to the sample block and a first class finishing job.

Here was a case where some of the old methods of 15 to 20 years back came in good. Today, there are non-grain raising stains to take the place of water stains and they will turn out just as clear as the water stains. Non-grain raising stains can be supplied by most of the finish manufacturers. I prefer to use non-grain raising stains rather than water stains. They are better in production plants.—*F. J. Green.*

Alternate Procedure For Same Job

An alternate procedure is as follows:

1) Sand bare wood with No. 4/0 garnet paper, removing any scratches, small dents, etc. Finish block sanding with No. 6/0 sandpaper until surface is polished.

2) Brush or blow all of the sand dust from the wood pores.

3) Stain all sap streaks with an NGR sap stain (a stain to darken the light sap wood to match the color of the dark walnut).

4) Stain all surface with an NGR stain to the color or effect desired.

5) Apply a wash coat made up of one part 19% solids lacquer sealer to four parts lacquer thinner.*

6) Let dry one half hour; scuff sand with No. 7/0 garnet sandpaper.

7) Fill with a good 12-hour filler cut in the proportion of 12-lbs. of

*An interesting finish can be obtained by using an orange lacquer sealer, but be sure this material is color fast.

filler to one gallon of naphtha. Let dry 12 hours.

8) Seal with one full coat of 19% solids lacquer sealer.*

9) Let dry one half hour; sand smooth with No. 7/0 garnet sandpaper.

10) Apply three coats of 24% solids semi-gloss (50%) alcohol proof lacquer, letting each coat dry two hours before the next coat is applied.

11) Let dry at least 12 hours. Oil sand with No. 360 grit sandpaper. Rub with a good compound to the desired sheen.

This same procedure can be followed when finishing mahogany, but on mahogany it is advisable to use a glue size before the No. 6/0 sanding of the bare wood.—*H. Hardesty.*

Power Wire Brushing Smooths Metal

DEMANDS FOR increased production in a given amount of manufacturing space, the lack of highly skilled hand labor necessary to perform a quality operation, and increased costs have caused an increasing trend toward the use of semi-and full-automatic machines.

This fact is illustrated in surface finishing (metal surface smoothing) operations. The necessity for holding down costs in the face of purchasers' demands for higher quality finishes, and the necessity for maintaining uniformity of the finished product have brought about the adoption of automatic power wire brushing methods.

While automatic wire brushing ma-

KEEP BOOTHS FIRE-SAFE THIS LABOR-SAVING WAY
WITH
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PEELABLE SPRAY-BOOTH COATING
Using expensive labor to scrape down spray-booths costs a lot more than peeling off accumulated overspray in big sheets. Safer, too. Order a 5-gallon Test-Sample at Drum Lot price.
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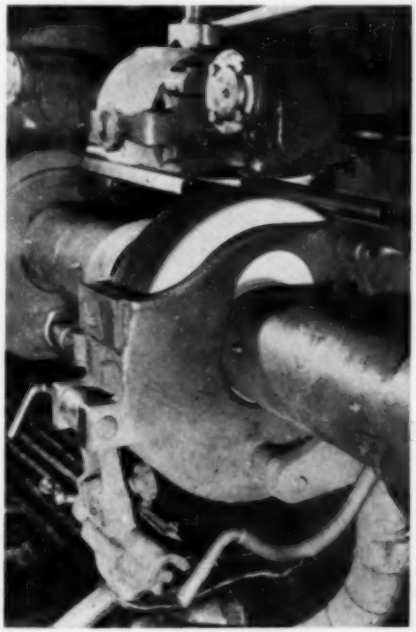
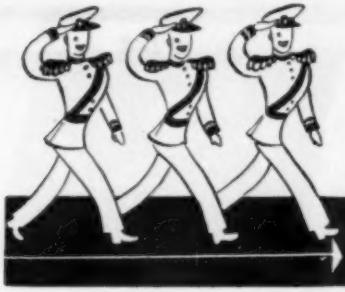


The cold rolled tube is fed into this in-line brushing machine. The drive mechanism on the right rotates the work as it feeds it past the brush face. Brushing time for each tube is approximately 45 seconds.



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Mr. Spruce has been associated with the DeVilbiss Company for more than 23 years. He has a wide acquaintanceship throughout the trade in the Southwest.

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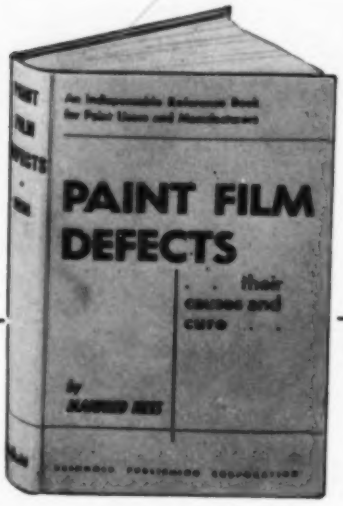

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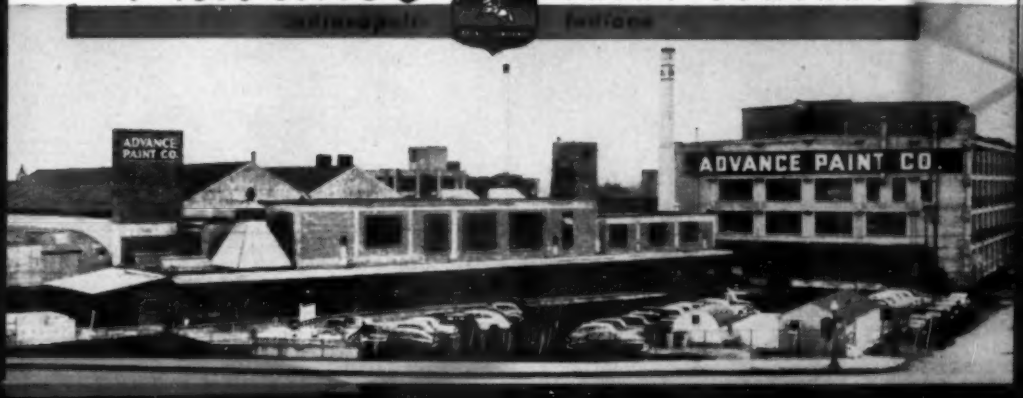

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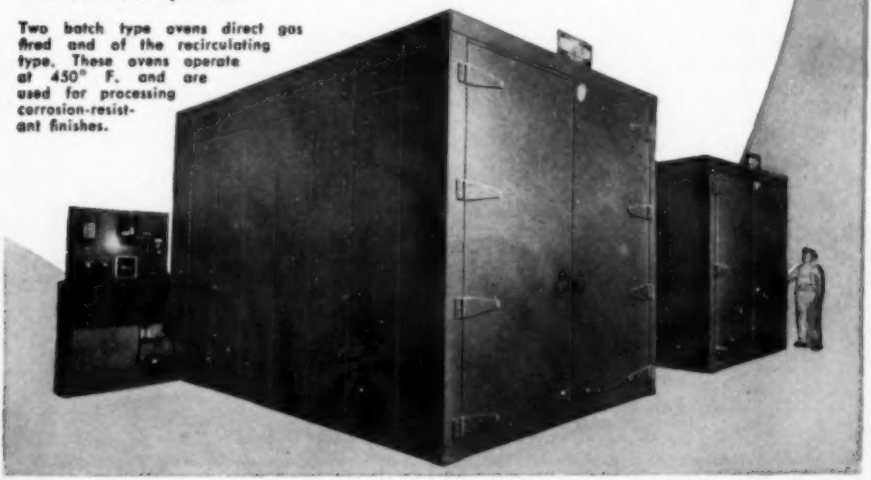

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